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LECTURES

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

DELIVERED AT GUY'S HOSPITAL BY

DR. BLUNDELL.

Lecture XXVIII.

Of the means of superseding the Cæsarian Operation.

The Cæsarian incisions, it seems, from the remarks of a former lecture, are attended with much danger, and hence it has been asked, whether we have not the means of superseding it? May not an operation, so formidable in its nature, be rendered altogether unnecessary by measures of a different kind?

If the pelvis be contracted in so high a degree, that parturition, by the natural passages, is impossible, I need scarcely tell you, that the shortest way to avoid the necessity of the operation, would be by abstinence altogether from intercourse with the other sex. The most solid resolution, however, may sometimes thaw; and when a woman is married, she may be placed under those circumstances, in which it is not very easy to adhere to this advice; her life perhaps falling a sacrifice to her neglect. My friend Dr. Hull, of Manchester, once transmitted me the case of a woman whose pelvis was contracted in a high degree; she knew her situation, remained in a state of abstinence for many years, but afterwards became pregnant, and died. Now is there any other mode in which, when the obstruction of the pelvis is insuperable, the formation of a fœtus may be prevented? In my opinion there is: for if a woman were in that condition, in which delivery could not take place by the natural passage, provided she distrusted the circumstances in which she was placed, I would advise an incision of an inch in length in the linea alba above the symphysis pubis; I would advise further, that the fallopian tube on either side should be drawn up to this aperture; and, lastly, I would advise, that a portion of the tube should be removed, an operation easily performed, when the woman would, for ever afterward, be sterile. All this, after due consideration, circumstances not forbidding. But the abdominal incision—that is bad. True; but the Cæsarian incision, that is worse. Is not that true also. Again.

If a woman, in the earlier months of pregnancy, is known to have a pelvis contracted in a high degree; is there nothing which you may then do to prevent an ultimate need of the Cæsarian operation? Why, yes; abortive medicines might, in this case, be thought of; or these failing or rejected, if you could feel the os uteri, you might introduce a female sound, or any other instrument of that kind; and passing this sound into the uterine cavity, you might completely break up the structure of the ovum, so as to prevent the progress of generation. In doing this, there would always be a risk of hæmorrhage; but where you are endeavouring to avoid the necessity of the Cæsarian incisions, this risk would be justifiable. The substitution of the smaller evil for the greater, is frequently the principle of the healing art. But what, if the os uteri be inaccessible, is there, in such case, any other expedient to which we may have recourse? In a case like this, were my opinion consulted, I should incline to reply—as a substitute for the Cæsarian operation, let an incision be made as before above the symphysis pubis, then let some small instrument, a trocar or canula, be carried into the cavity of the uterus; let this instrument be sufficiently stiff to enter the cavity, and retain its form there under pressure; and then, let it be resolutely moved about in the uterus, so as to break up completely the texture of the ovum. The whole instrument need not be much thicker than a bell-wire; the process is allied to that of acupuncture: the point of the trocar, on entering the uterus, should be withdrawn within the canula; a finger should be carefully placed on the uterus, so as to guide

the instrument, and guard against injury of the intestines or the bladder. Scribblers had better content themselves with sneering at the operation—surgeons had better perform it—artem quisque suam. To produce future sterility, the tubes might be rendered impervious.

But suppose the gestation has reached the end of nine months, is there then nothing which may then be done, to supersede the Cæsarian operation? Why, if the patient can be delivered by having recourse to perforation, by all means this should be adopted. Observe, it is a rule—an axiom in British midwifery, that we are never to deliver by the Cæsarian operation, provided we may, in any way, deliver by the natural passages. Difficult and dangerous as the delivery is, in some cases, when effected by the natural passages, I feel persuaded that women might sometimes be more safely and more easily delivered by the Cæsarian incisions, than by the passages of the pelvis; but if, acting on this persuasion, we were once to establish the principle, that the Cæsarian delivery may be used as a substitute for delivery by the perforator, there would, I fear, be too many cases in which it would be needlessly adopted, and men would now and then, not to say frequently, perform this operation under circumstances in which it ought never to have been dreamed of. Where, therefore, the embryotomic delivery is practicable, let this be preferred. But then, you may reasonably ask here, how are we, in any case, to decide clinically—at the bed-side I mean, whether the delivery be practicable or not? To this query I wish it were in my power to return a satisfactory reply. Much must depend on the dexterity, and other qualities, of the operator; for one man may be able to succeed in the delivery, when another may not. Much again must depend upon the instruments which we employ; to the operative midwifery of Dr. Davis, I must refer you for an exposition of these different contrivances, together with a description of his own inventions and improvements. Much must depend, too, upon the size of the aperture; and it seems, from the researches of Hull and Burns, that the smallest aperture through which a full grown fœtus may be abstracted by the embryotomic operations, under circumstances the most advantageous, must be, at least, three inches in its length, and an inch and three quarters in its breadth. To justify embryotomy, therefore, there must be a clear passage through the pelvis, of these diameters at the least. From the consideration of all these particulars must emanate the determination, whether you will, or not, embryotomize. Before you come to a decision, procure the best advice within reach. With these suggestions, I must commit you to the waters; I wish the compass were less perplexing in its indications. Happily, these difficulties are rare.

Section of the Symphysis Pubis.—Laborious Labours.

With a view of enlarging the capacity of the pelvis, in cases of labour more or less laborious, it has been proposed to make a division of the symphysis pubis, an operation which is easily performed. In executing this operation, the surgeon or accoucheur cuts down upon the joint, and carries the scalpel between the extremities of the ossa innominata, so as completely to detach from each other, taking care that no injury be inflicted upon the urethra or bladder.

The simple division of the symphysis pubis, however, enlarges the pelvis but little; and, therefore, in order to secure the full benefit of the operation, it is proposed further, that the surgeon should separate the ossa innominata from each other, to the extent of one, two, perhaps I may say of three or four inches. It seems to be ascertained pretty clearly, by observation made on the Continent, that in the mere division of the symphysis, pain, not very intense, and no incurable injuries of the part are to be expected; but if the joint be not merely divided, but if, moreover, the bones be separated from each other to the extent of two or three inches, then in consequence of the injury done to the sacro iliac synchondrosis, and the lesion of the sciatic nerves, and the straining of the softer viscera, which are connected with the pelvis, the operation becomes one of considerable pain, and is, perhaps, scarcely less dangerous than the Cæsarian incisions themselves, even in the present condition of that mode of delivery.

The section of the symphysis pubis was proposed originally as a substitute for the use of the perforator and the Cæsarian operations. There seems, however, to be no reasonable doubt, that as a substitute for the Cæsarian incisions, this operation is exceedingly inadequate; for the pelvis, being distorted in a high degree, if you were not merely to divide the symphysis pubis, but to separate the bones to the extent of two or three inches from each other, you would have a great deal of difficulty in getting away the child; very probably you would be compelled to lay open the head, and at the same time you would inflict great injury on the pelvis, and the softer parts generally, more especially the bladder, so that I conceive the operation would be as dangerous and painful to the mother, and far more dangerous to the child, than the Cæsarian delivery itself. Add to this, the difficulty of performing the operation at all under the higher distortion of the pelvis.

But although the operation is not a substitute for the Cæsarian, some may think, that, in many cases, the section of the symphysis might supersede the necessity of the perforator, and this I believe to be true. Generally, where there is a narrowing of the pelvis requiring the use of the tractor forceps or perforator, the contraction lies between the promontory of the sacrum and the symphysis. There is a want of room between the front and back, which a division of the symphysis pubis is calculated in a measure to remove. In common and ordinary contraction of the pelvis, it may then be said, why is not the section of the symphysis pubis substituted for the operation of embryotomy? Why! for this valid reason, because it is an axiom in British midwifery to sacrifice the child to the safety of the mother, and, in these cases, without injury to the parent, the child may be brought away by laying open the head. Remember too, what has been stated already, that in narrowings of the brim, the fœtus may often be saved with little risk to the mother, by the induction of delivery in the seventh or eighth month. On both these accounts, therefore, because we may deliver by the perforator, and because, too, we may altogether supersede the need of this instrument by the indication of premature delivery; the division of the symphysis pubis is unjustifiable as a general practice, when the pelvis is slightly contracted. Not to add to these objections, that if we were to allow of the division of the symphysis, in those cases where there is merely a narrowing of the pelvis between the front and the back, such is the present imperfection of obstetric diagnostics in general, that there would be many cases in which it could be performed, where it was not at all necessary.

One case there is in which I conceive the section of the symphysis pubis might be justifiable, that I mean in which the perpetuation of a dynasty or..... but it is unnecessary to enter further into this topic.

And thus much, then, respecting laborious delivery in the general; we will now, if you please, proceed to the consideration of the different varieties of laborious parturition, together with those modifications of the general practices which these varieties require.

The laborious labours which are giving rise to the more formidable difficulties during parturition, may be divided into three species or varieties; those labours, I mean, in which the difficulty arises from the rigidity of the softer parts; those in which the difficulty arises from a deficiency of room between the bones, and those in which the difficulty is produced by an unfavourable position of the fœtus, and more especially of the cranium; not to add, that we sometimes meet with cases in which the difficulty may be ascribed from these causes mixed.

And first, then, with respect to the laborious labours resulting from an unfavourable position of the cranium. Where a labour proceeds naturally, the presentation is of the vertex, the face in the beginning of the delivery lying towards the one, and the occiput towards the other side, in the way here demonstrated; but as parturition advances, the head descends, and the face takes place in the hollow of the sacrum, and the occiput under the arch of the pubis, and the sagittal suture lies along the perineum, and thus the head emerges. It is not always, however, that the fœtal head, in passing, assumes these favourable positions; for sometimes when the presentation is vertical, the face is lying forward throughout the labour; and sometimes, instead of a vertex presentation, we have a presentation of the forehead, or of the face; difficulties being in this way produced, as may be seen from the apparatus here exhibited. Thus, then, it appears, that there are three varieties of the laborious labours produced by unfavourable positions of the fœtal head; that, I mean, in which the vertex presenting the face lies forward on the symphysis pubis all through the labour; that variety again in which the face is lying over the centre of the pelvis; and, lastly, that position of the head, not without its difficulties, though less important than the former, in which the presentation, instead of being vertical, is frontal.

When it is found, by examination, that the child's head is lying unfavourably for transmission, an accident, understand, which is by no means very uncommon in its occurrence, the accoucheur begins to consider what steps become proper, in order to facilitate the delivery. Now, there seem to be four different ways in which the difficulty may be alleviated; by turning I mean, by rectification of the position of the head, by the use of instruments, and by the natural efforts. And here I wish you to understand clearly at the outset, that when the child is lying unfavourably, it does not, therefore, necessarily follow, that you must immediately have recourse to artificial means of delivery; for, under presentations of the face or forehead, or in vertical presentations, with the face lying forward on the symphisis pubis, by the mere efforts of the uterus, if the pelvis be large and the head small, the child will not unfrequently be expelled. It sometimes happens, however, that the natural efforts fail us, more especially if the pelvis be contracted or the head be large, and, in such cases, we may be compelled to have recourse to some of those instruments, which I laid before you on a former occasion. The tractor or forceps be-

ing first tried, and these failing, the perforator.

By some it has been observed, that where the child lies unfavourably, it may very readily be brought away by the operation of turning. Now, in some cases, as, for instance, where the pelvis is large and the softer parts are lax, and the hand of the accoucheur is dexterous, so that the feet may be seized without difficulty, the operation of turning might, perhaps, be desirable. I must entreat you, however, to look upon this method of delivery turning as an exception to the general rule; for although now and then, perhaps, the child may be with advantage withdrawn by the feet, when the head lies unfavourably, yet, as a general practice, turning is improper, because it requires the introduction of the hand into the uterus —because that operation should never be performed without there exist an absolute need for it—and because, by the natural efforts, or the use of instruments, abstraction of the child may be very generally accomplished. The more I see of midwifery, the more I feel the necessity of evading the operation of turning; wherever to avoid it is practicable. Speak! you who have witnessed the ruptures of the uterus, is this caution necessary or not?

In some cases, again, where the head is lying unfavourably, its position may be rectified. The pelvis is large, the parts are lax, the hand may be easily introduced, and, with the action of the hand, the position of the head may be altered. Suppose, for example, the child present by the face, you may insinuate the hand into the pelvis without violence, and bring down the vertex. Suppose, again, I make an examination, and, discovering a frontal presentation, I pass my finger over the occiput; by the mere action of the finger, or by the play of the lever, I may, in this manner, rectify the presentation of the cranium. Nevertheless, though this rectification is, in itself, highly desirable, yet, as a general practice in these cases, it is scarcely proper; for it cannot be easily accomplished without carrying the hand along the vagina, and some little way into the uterus, and, in my opinion, the risk of rupture constitutes a valid objection to this method of operation. To an adjustment of the head by the lever I have less objection, and this may be sometimes accomplished as here shown.

Instead of rectifying or turning, therefore, in these cases of unfavourable position, unless circumstances are highly favourable, the more wholesome practice is, either to commit the woman to the natural efforts, or to have recourse to the lever, forceps, or perforator, according to the nature of the emergency.

But here, perhaps, you may ask, how are we to decide whether, in any given case, we ought to resort to the employment of instruments, or to confide in the natural powers of the system. Let me remind you then of the rule which has been already so often prescribed; if the woman have not been in strong labour for four-and-twenty hours, and if no dangerous symptoms are apparent, then you are not to interfere; but if dangerous symptoms are manifesting themselves, referable to the prolongation of the delivery, or, if the woman have been in strong labour for four-and-twenty hours, the head making little or no progress, then the embryospastic instruments become justifiable. Further, if the embryospastic instruments have been fairly tried without success, and if dangerous symptoms are manifest, or if the woman have been in labour for six-and-thirty or eight-and-forty hours, the head not descending—notwithstanding the dreadful nature of the operation, you are justified in embryotomising.

Face presentations may, sometimes, be rectified by the fingers, or the tractor, as now shown. Forehead presentations may spontaneously become facial, or vertical; by the fingers, or the tractor, rectification may be accomplished in this manner. The face, when lying on the symphysis pubis, may be, in three different ways, thrown into the side of the pelvis: by grasping the cranium, when above the brim; by the action of the short forceps, when it is below the brim; or, when the head is in the cavity, by making pressure, during pain, with two fingers, placed on the side of the cranium near the face, the face being carried, by little and little, first into the side of the pelvis, and then into the hollow of the sacrum behind. Observe the demonstration.

Of Laborious Labours, arising from deficiency of room in the Cavity or Apertures of the Pelvis, superior and inferior.

In the preliminary lectures, I took occasion to observe to you, that from fractures, mollities ossium, or rickets, more or less of distortion and contraction of the pelvis may be produced; and, in a view to practice, we may divide these distortions into two kinds, namely, those of slighter degree, and which are more frequent in their occurrence, and those contractions in which the coarctation is very considerable, specimens of both kinds of contraction are laid on the table before you. Again.

Contractions of the pelvis, in the *higher degrees*, are divisible into two varieties—the *elliptical* and *angular*, here shown. For a description of these two varieties, I must refer you to my former observations on the deviations from the standard pelvis; for these

greater distortions are so rare, in ordinary practice, that I deem it unnecessary to treat respecting them again. When you meet with the *slighter* contractions of the pelvis, (in their occurrence not uncommon,) these contractions may lie in any part of it—brim, cavity, or outlet; but, in that degree, which gives rise to laborious labours, they are most frequently met with at the brim, between the front and back of the pelvis, interposed sometimes between the promontory of the sacrum and the symphysis pubis; and sometimes between the promontory of the sacrum and acetabulum. In the specimen here exhibited, the contraction lies between the symphysis pubis, and the promontory of the sacrum; and here is another specimen of coarctation, in which the contraction is seated between the acetabulum and the promontory.

By different practitioners and operators, those contractions of the pelvis, in a slighter degree, may be differently ascertained; my own method, I formerly explained to you. If a woman have had a number of children with difficulty, all still-born, for example, or all requiring the use of instruments; if, on making examination, you feel the promontory of the sacrum with unusual facility; if your patient have been in labour for a length of time, the waters being discharged, and the parts relaxed, and the head not descending; if the cranium, on examination, be found to be intumescent, the margin of the one parietal bone lying over the margin of the other, you may then be pretty well satisfied, that the pelvis is too small. By the difficulty of previous labours; then, by the unusual facility with which the promontory may be felt; by the failure of the descent of the cranium after strong efforts, and by the swelling of the scalp, and the overlapping of the parietal bones, coarctations may, in general, be detected, without the help of those pelvimeters which were formerly exhibited, though these instruments are not to be despised.

The laborious labours, which thus result from deficiency of room among the bones of the pelvis, are usually divided, in my own practice, into *three* varieties; the first consisting of those cases in which the pelvis is so highly contracted and distorted, that the head does not descend into the pelvis at all; the second, comprising those more frequent cases, in which the head comes down among the bones of the pelvis, and is there incarcerated, so as neither to advance nor recede; the third, comprehending those cases which are of all the most common, and where there is just that degree of contraction, which prevents the descent of the head into the pelvis, the cranium dipping down but a little way within the superior aperture.

You may be in practice for a length of time without meeting with a single instance of the first variety of laborious labour; namely, that case in which you have the highest degrees of contraction, so that the head cannot enter the pelvis at all; now and then, however, such cases must occur to you, and one or two have fallen under my own notice. In the extremer difficulties, the pelvis may be so much contracted, that even the os uteri cannot be reached by the finger. Should it fall to your lot to operate in laborious labours of this kind, in order that you may decide rightly, I would advise you, by all means, to procure the best advice in the neighbourhood. Now, should it appear on consultation, that delivery by the natural passages is impracticable, and that the Cæsarian delivery is required, in accordance with principles already explained, it is obvious, that the sooner the operation is performed, the better; for where it is performed early, there is a fairer chance of saving the child, and for the woman herself, there are better hopes of recovery.

Again, in those cases of higher distortion, provided embryotomy be thought of, and the child is to be abstracted by the use of the perforator, averse as I am to an operation so dreadful, I must still maintain, that the sooner we perforate the better; nay, in the very commencement of the labour, if it be perfectly obvious that embryotomy must at last be adopted, the operation becomes justifiable. By embryotomising early, you secure the advantage of operating, while you are yourselves fresh, and not exhausted from long attendance, the woman herself being in full spirits and vigour; besides which, you have it in your power to leave the head in the pelvis for hours after it has been laid open by the perforator, so that it softens and putrifies, and readily separates into different pieces; a condition which materially facilitates the delivery.

But here it may be asked, "In these cases of extreme difficulty, how is it that we are to decide whether the Cæsarian operation, or the operation of embryotomy should have the preference, for the two practices are very different?" Recollect yourselves, and you will remember, that I have already met this interrogatory, and to these remarks, comprised in the preceding lecture, I must again refer you.

There is yet a second variety of laborious labours which you must now and then meet with in your practice, I mean that variety in which the head, pushed down among the bones of the pelvis, becomes impacted there, so as to constitute that kind of case which is familiarly denominated the *locked* head. In these cases where the head is incarcerated, great danger arises in consequence of

the strong and permanent pressure which it makes on the softer parts, and contusions, inflammations, suppurations, and sloughings of the mother, not to mention the death of the child, may all of them be the result. Here, too, I may notice especially, that owing to this pressure on the pelvis in front, the bladder may be injured, great accumulations and disruption ensuing, a specimen of which accident is on the table before me. Under these accumulations of urine, too, even where no rupture occurs, acute inflammation, or chronic disease, may be the result, and the patient may be irrevocably injured, or perish in consequence. Left to themselves, therefore, I look upon these incarcerations as properly ranging among the most dangerous deliveries with which we have to contend, and yet (though dangerous) when thoroughly understood, they may be managed with perfect facility.

If you find the head among the bones of the pelvis, and firmly impacted there, you will be led to consider what are the steps to be taken, in order to render the delivery secure. Now, in cases of this kind, women are sometimes delivered by the natural efforts, and sometimes by the operation of the tractor, forceps, or perforator. So that it comes to be a point of consideration whether we ought to have recourse to the use of the instruments, or whether we ought to rely upon the natural efforts? In deciding this question, I should myself be guided principally by that general rule, or canon, which I have already so often prescribed; and if the woman had not been in labour for four and twenty hours, and if no dangerous symptoms were manifesting themselves, I should then commit her to the natural efforts—for a meddlesome midwifery is bad; but if, on the other hand, I found that dangerous symptoms were appearing, or, independently of these symptoms, if the patient had been four and twenty hours in strong labour, the head making no progress, I should then make trial of my tractor and forceps; if, lastly, these instruments failed, or if dangerous symptoms were appearing, or if, independently of these symptoms, the patient had been in labour six and thirty or eight and forty hours, I should then deem myself justified in having recourse to the perforator.

There are some practitioners, who are guided by a very different principle, too valuable to be neglected; I mean, the degree of compression which the head is making on the softer parts: and if the head is among the bones, and if, upon examination, it appears that it is very firmly locked there, so that the finger may not be insinuated between the cranium and the symphysis pubis, a prompt delivery is recommended; but, on the other hand, if, on examination, it is obvious that the fingers, though not without difficulty, may be passed between the bones and the cranium, they wait for two, four, or six hours, a longer or shorter term, according to the degree of pressure. Now, I could wish this rule to operate influentially upon your practice, though you may still adhere, in the main, to the general maxim prescribed. If you find that the head is but loosely incarcerated, you may wait with more confidence; but if it so happen, that the head is more firmly impacted between the front and back of the pelvis, you must watch more vigilantly for the symptoms indicative of contusion; and you must, too, promptly have recourse to delivery, as soon as the first marks of injury appear. There is, I suspect, little ground for apprehension, while the pulse remains below 100; a pulse more frequent, though not necessarily dangerous, ought, in all cases, to awaken and alarm. Beware of overlooking the indications of injury from compression; beware of delaying the delivery too long.

There is yet a third variety of laborious labour, arising from want of room, of all others the most common in its occurrence, and which requires some little dexterity in its management; the case, I mean, in which you have a slight narrowing of the brim, and where the head is prevented from thoroughly entering the cavity, being pushed a little way only into the superior aperture. Now, in deliveries of this kind, it not unfrequently happens, that the child is expelled by the natural efforts, notwithstanding the coarctation, and therefore these efforts ought to be fairly tried; for it does not follow, because you have a narrow pelvis, that you are officiously to interfere with instruments, without further consideration. But it not infrequently happens, when the natural efforts are fully and fairly tried, that these efforts are inadequate to the expulsion of the fœtus, and in such cases the tractor or forceps become necessary, or, these failing, the perforator.

In these cases, by some practitioners, turning is recommended—a practice which I must reprobate in a decided manner. It is true, that where there is a narrowing at the brim of the pelvis, a skilful operator might, now and then, introduce his hand, and bring away the fœtus by this undesirable operation; but to me, as a general practice, it seems to be highly improper; first, because in performing it, you must carry your hand into the uterus, an operation always to be deprecated, and, secondly, because when you have turned and brought down the fœtus, as to its limbs and trunk, the abstraction of the head and shoulders must still be attend-

ed with difficulty, for the narrowing of the brim remains, and by endeavouring to extract the cranium in this manner, you may detach the head from the body.—Turning, therefore, I cannot approve. In narrowings at the brim, it is better, as a general practice, either to suffer the woman to be delivered by the natural efforts, or to have recourse to the instruments already enumerated—the tractor, forceps, or perforator.

Again, it may be asked, granting that these two modes of delivery are to be preferred, how are we to decide whether we ought to commit the delivery to the natural efforts, or have recourse to the embryospastic instruments? Why, to this, as to many other emergencies, the general rule will apply; and, if the woman have not been in labour for twenty-four hours, and if no dangerous symptoms are appearing, it is better not to interfere; but if, on the other hand, the woman have been in labour for twenty-four hours, or, if dangerous symptoms are manifesting themselves—the pulse rising, the bladder closing, inflammation of the abdomen appearing—then we may, properly, have recourse to the lever or the forceps; and further, if these instruments fail, or if dangerous symptoms appear, or, independently of any dangerous symptoms, if the woman have been six-and-thirty, or, at any rate, eight-and-forty hours in labour, we are again justified, though unwillingly, in having recourse to the perforator.

What I stated to you in a former lecture is well worth remarking here, namely, that in those instances where you have laborious labour, from a narrowing of the brim, the head will sometimes mould itself, and thus come away. In the morning you apply your forceps, but cannot extract the cranium. Well! no dangerous symptoms manifesting themselves, you wait till evening, and then try the forceps again; and now the head moulded by compression and the pains, so as to adapt it to the passage, on this second application of the forceps, a living fœtus is abstracted. Thus much, then, with respect to those laborious labours which arise from the second cause, namely, a want of room among the bones of the pelvis. Of the labours with rigidity, we will treat at our next meeting.

LECTURES ON CHEMISTRY,

BY

PROFESSOR BRANDE.

Delivered at the Royal Institution of Great Britain.

Lecture XLI.

On Silver and its Compounds, and Gold.

With the general properties of silver, and its numerous applications in the arts, I have no doubt you are already acquainted. It is found native in a variety of combinations, sometimes massive, and sometimes crystallised, in cubes and octoëdra. The native silver, however, is seldom pure; and, therefore, for chemical purposes, it is necessary to dissolve it in pure nitric acid diluted with its weight of water, and then precipitate it upon clean copper dipped into the solution; or it may be obtained, by adding a solution of common salt to the solution of the nitrate, made as I have just described, the precipitate being first washed and dried, and then fused with its own weight of carbonate of potash.

The specific gravity of silver is 60.5, and it is so ductile, that it may be drawn into wire finer than the human hair, and may be extended into leaves not exceeding the ten thousandth part of an inch in thickness. This is a specimen of the silver leaf; which, as you see, on exposure to the voltaic battery, burns readily with a green light, and throws off abundant fumes, which are the oxide of silver. It melts at a bright red heat, and appears very brilliant when in fusion; if the heat be pushed to great intensity, it boils and evaporates. It crystallises, if suddenly cooled. It is procured in considerable quantities from the native sulphurets, which are reduced by amalgamation; and, in this country, it is most generally found combined with *galena*, the sulphuret of lead.

Silver unites with oxygen, and forms an oxide, which consists of one proportional of metal, and one of oxygen; but, from some experiments of Mr. Faraday, it would seem that there is another combination of silver and oxygen, containing a smaller proportion of oxygen, but which is not capable of uniting with the acids. The oxide may be easily obtained, by adding lime-water to the solution of the nitrate of silver, and washing the precipitate. It is insoluble in water, of a dark-green colour, and when heated, the oxygen is driven off, and metallic silver is obtained. The composition of the oxide

has been a matter of some dispute; but that which I have mentioned, is pretty nearly correct. By dissolving it in ammonia, a fulminating powder is obtained, and the best mode of making it, is to pour a small quantity of liquid ammonia upon the oxide, by which means a portion of the oxide is dissolved, and a black powder remains, which is the powder in question. It explodes when gently heated; nitrogen and water are given out, and the silver is reduced. It should be handled with great caution, and made in very small quantities at a time, as it sometimes explodes while wet.

Chlorine and silver combine to form a chloride of silver, and the combination is easily effected by adding a solution of chlorine, or common salt, to a solution of nitrate of silver; a heavy white powder is precipitated, which, on exposure to light, becomes brown, and ultimately black. If heated to redness in a crucible, it melts; and, on cooling, concretes into a semi-transparent grey substance, which has been called *luna cornea*, or horn silver; but if heated to a white heat in an open vessel, it is volatilised. It is very soluble in ammonia, by which circumstance it may be distinguished from the other chlorides; but you should be cautious how you apply heat to this solution, as a precipitate of fulminating silver is sometimes formed. If the fused chloride be exposed to ammoniacal gas, it absorbs a considerable portion of it; and if this substance be thrown into chlorine, the ammonia spontaneously inflames. From several experiments, which have been made on its composition, we may state, that it is a compound of one proportional of silver, and of one of chlorine. If you digest oxide of silver in chloric acid, you obtain small rhomboid crystals, which are *chlorate of silver*. If you attach a slip of silver to one of zinc, and put them into muriatic acid, the silver instantly acquires a crust of chloride in consequence of the negative energy imparted to it by the zinc, and the zinc becomes rapidly dissolved; a fact which seems to illustrate the influence of electricity on chemical action in a very beautiful way.

The *iodide of silver* is of a greenish yellow colour, insoluble, and decomposed when heated with potash; it may be obtained in the form of a precipitate, by adding hydriodic acid to a solution of nitrate of silver.

The *nitrate of silver* is formed by dissolving silver in nitric acid, diluted with three parts of water; and there is, at the same time, an evolution of nitric oxide gas. The solution should be perfectly clear and colourless; but if any copper be mixed with the silver, it will always have a greenish tint; and if any muriatic acid should be present, the solution will be turbid, and will deposit a white powder. It is highly caustic, tinging animal substances of a yellow colour, which, by exposure to light, becomes purple, and ultimately black. It is soluble in about its own weight of water at 60°, but the solution blackens on exposure to light, and is then no longer perfectly soluble in water, owing to the separation of a portion of metallic silver. When fused, and cast into small cylinders, it is called the *lunar caustic*, or the *argenti nitras*, of the present Pharmacopœia. If a few grains of the nitrate be mixed with a little sulphur, and struck smartly with a hammer, a detonation takes place: or if a small bit of phosphorus be mixed with a bit of the nitrate, and struck in the same way, it produces a very violent explosion. A stick of phosphorus introduced into a solution of the nitrate, soon becomes beautifully incrusted with the metal. A plate of copper occasions a brilliant precipitation of silver, and the copper is dissolved in the acid. If you make an amalgam of one part of silver, and seven of mercury, then introduce a portion of this into a solution, composed of six drachms of a saturated solution of nitrate of silver, and four drachms of a saturated solution of mercury, diluted with five ounces of distilled water, and the vessel in which it is made be kept perfectly at rest, you will find that in a few minutes small filaments of silver darken the surface of the amalgam, and, in forty-eight hours, the whole will have separated in an arborescent form.

The solution of the nitrate of silver is sometimes used as an ink, with which to mark linen; the mark is produced by a precipitation of the oxide of silver upon the fibre of the linen. The solution of the nitrate of silver is generally thickened with a little gum, and coloured with a little sap green, or Indian ink; and then, by way of precaution, the linen is previously prepared, by wetting the place, on which you intend to write, with a weak solution of subcarbonate of soda, and a little gum; the alkali prevents the acid, if there be any in excess, from acting upon the linen, and the oxide of silver is precipitated, giving, when dry, a dark-coloured cipher on the part. This salt is ridiculously enough resorted to for the manufacture of those compounds employed to change the colour of the hair black, and when applied recently to grey hair, certainly does render it black; but the glory only lasts for a day or two, the grey roots of the hair again appear, giving the person the odd appearance of having hair half grey and half black; and sometimes you see it all become purple; at other times there are patches of purple and grey, giving such victims of vanity a very whimsical appearance.

The *sulphate of silver* is usually obtained

artificially, although it exists native, of which this is a specimen. There is another beautiful ore of silver, which I can merely mention to you, namely, a compound of antimony and silver; it is a triple *sulphuret of antimony* and *silver*; it is called the red, or *ruby silver ore*. The sulphur is with difficulty soluble, and therefore is easily obtained by precipitation; the salt dissolves in boiling water, and deposits, on cooling, filamentous crystals; it requires 90 parts of water for its solution, at common temperatures, and is composed of one proportional of oxide of silver and one of sulphuret of antimony. It is occasionally employed in the laboratory as a test for muriatic acid.

Phosphorus combines with silver, and produces a *phosphuret of silver*, a brittle metallic compound of no use or importance; and the same may be said of the *borate* and *carbonate*.

I need say nothing to you of the modes of distinguishing the salts of silver, as from what has been shown you, you must be already acquainted with their properties, namely, their affording a white precipitate, with muriatic acid, which becomes black on exposure to air, and the precipitation of metallic silver upon a plate of copper.

Among the *alloys* of silver there are some of considerable importance. The standard silver of this country is a metal too soft to be used in its pure state for general purposes, and therefore it is customary to add to it a small proportion of copper, by which its hardness is much increased, and its colour not materially impaired. What is called silver plate, the silver used for the manufacture of plate, and that used for coin, is composed of 11 $\frac{1}{12}$ parts of pure silver and $\frac{1}{12}$ of copper. Eleven ounces and two pennyweights of pure silver, and eighteen pennyweights of copper, form a pound troy of standard silver; and this is coined into sixty-six shillings. Other alloys, but not of much importance, are formed with lead, antimony, cobalt, and bismuth, by which the metal is rendered brittle, and it may be made so brittle as to be entirely useless. It enters into combination readily with mercury, and forms an amalgam used for plating. The amalgam being heated on a sheet of clean copper, the quicksilver is driven off by heat, and the silver is left; but this is a very imperfect mode. The best way is to roll out the two metals together, which answers all the purposes of silver at a less expense. The manufacture of plated goods has been brought to great perfection in this country, especially in Birmingham and Sheffield; the edges should be made of standard silver, especially when worked or ornamented, and goods thus manufactured answer exceedingly well.

As silver is a very important article in the commercial world, it becomes necessary to be in possession of some mode of determining its purity, and this process, which is a very important one, is almost constantly performed by the refiners of silver, and by assayers, for the purpose of ascertaining the real standard nature of the coin; and, as you know probably, every piece of silver manufactured into plate must be subjected to analysis, at the Mint, in order to ascertain whether it is standard silver. It might be done in a very simple way, by the humid process, as it is called, or solution; supposing that you have a button of silver, containing a certain weight of copper, you weigh the button and dissolve it in nitric acid, and then precipitate the silver by means of muriatic acid or chlorine; the silver falls down in combination with the chlorine, and the copper is left in solution; the chlorine, you know, combines with the silver in a definite proportion, and therefore, by taking the weight of the chloride precipitated, you obtain the quantity of fine silver contained in the solution. This process, however, takes up too much time, and the shortest and best mode is that of *cupellation*, a mode of assaying which I shall endeavour briefly to describe to you; and here I must observe, that I have frequently endeavoured to show it within the limits of a lecture, but never with much success.

In the first place, you employ a *muffled furnace*, so contrived that a crucible can be introduced into it, heated red hot, leaving convenient access to the mouth of the crucible. Having a strong red heat in the muffle, we take the silver which we are to analyse, and weigh a portion of it very carefully, about 20 grains, we will say; and this having been done, you then roll it up in about two or three times its weight of lead, which must also be carefully weighed, and the lead must be very pure for this purpose. Well, you roll the silver up in the lead, and put it upon what is called a cupel, a little crucible made of bone earth. As soon as the lead begins to feel the heat, it melts, the silver melts also, and you get an alloy of the two metals. You then introduce the alloy further into the muffle, where the heat is greater, and where the lead is converted into an oxide, which, during its oxidisation, oxidises also the copper, which was previously in combination with the silver. At a red heat, the lead and copper are readily oxidised, and the oxides are burned away in the cupel, which being done, ultimately the globule of silver becomes apparent, and when no longer any oxide is visible upon its surface, and the motion of the globule ceases and it assumes a brilliant appearance, you withdraw it and weigh it; the loss of weight gives you the quantity of copper burnt out of it by the lead. Know-

ing that silver is not oxidisable in the common furnace, and that copper is so, you might think that it would only be necessary to expose it to a white heat to get rid of the copper; but the oxide of copper is not very fusible, and the lead is, so that lead is usually selected for the purpose. This process was called, formerly, the *balneum metallorum*, or bath of the noble metals. Now, you may have fifty or sixty little cupels in a muffle at once, and you may, therefore, be trying as many bars of silver at the same time. In the process of coinage, this operation is conducted with great caution; the first experiment is made upon the bars as they are imported; they are then melted into smaller bars, to fit the machinery of coinage, and are again assayed, and then subjected to the operation of rolling and coinage. After coinage, a sample is taken from the bulk of coin and assayed a third time, and if the two last assays agree, there is evidence that the true standard has been adhered to. There is then a third operation, namely, the examination of the *picks*, which is this: a piece of coin is picked out of every seven hundred, both of gold and silver coin, and put into a box and locked up, which, in due time, is examined by a committee, composed of the great officers of the state, the principal officers of the Mint and of the Goldsmiths' Company.

In the process of cupellation upon a large scale, when the object is to act upon large quantities of silver, exactly the same operation is resorted to; instead of using a furnace of this kind, they employ a large reverberatory furnace, by which they can refine several hundred weight of the metal. The oxide of lead, which is necessarily formed in large quantities, is raked off as it forms, and the silver gradually makes its appearance; the oxide of lead or litharge thus collected, is afterwards reduced, and thus the lead is saved.

Among the other alloys of silver, there are none, perhaps, deserving notice, if we except those with *steel*, which the experiments of Messrs. Faraday and Stodart have taught us to be very valuable in the manufacture of some cutting instruments. The quantity of silver mixed with the steel was very minute, only one part of silver to 500 of steel, and yet this small quantity materially altered the quality of the steel; it seems to give the steel a very peculiar toughness, and if you once get a razor made of this alloy which cuts well, it will retain its sharpness for a long time.

Gold.—Gold, like silver, is found in the metallic state, and it will be worth while to give you a short account of the manner in which it is collected. It is found in mines associated with other metals, and sometimes in the metallic state, occasionally in such quantities that it may be scraped off in masses; but generally the gold is found diffused through the stone, and is separated by various processes, but principally by amalgamation, triturating the rock with mercury, and then washing away the earthy matter and distilling the mercury. There have been considerable quantities of gold found massive in alluvial deposits; many of the great rivers of Asia and America are celebrated for the quantities of gold they have produced. This gold is brought into the market under the name of alluvial, river, or grain gold. In some alluvial soils, masses of gold have been found of considerable size, as large as a man's fist; and some of the first visitors of America who followed Columbus, discovered masses of gold, of large dimensions, and of great purity, and in such quantities, that they thought they had discovered an inexhaustible source of the metal. Here are some specimens of gold found in Cornwall, in the tin-stream works, the product of some alluvial rock. When gold is found in rivers and torrents pretty near to the sources or falls, we may, in such cases, generally conclude, that it is derived from the adjacent hills or mountains, and that it has been washed down in consequence of its great specific gravity towards the valleys. But occasionally it seems to have been deposited in the soil in which it is found in another way, as seems to be the case with the gold found in the Rhine at Strasburgh; the river had perhaps penetrated some veins containing gold, or it had, perhaps, set through a stream containing gold, and this may account for the finding of gold in the plains and on the banks of the river.

Gold is remarkable for its immutability on exposure to air, for its fine rich yellow colour, and for its exceeding ductility and malleability. You may easily extend gold wire infinitely finer than a human hair, so as not to be visible without a magnifier; and a piece of gold leaf shows you to what an extreme tenuity it may be reduced. It may be made so light as to float in the air. In *Dr. Lewis's Philosophical Commerce of the Arts*, there is a very interesting account of wire drawing and gold beating. Now the exceeding extensibility of gold is seen in what is called *gilt wire*, which is silver wire gilded. A single grain of gold may be extended upon more than 30,000 feet of silver wire, and this will seem to give you a notion of the extensibility of gold, and the divisibility of matter.

If you were to take a piece of gold wire and heat it by the voltaic pile, the effect would be the melting of the gold, and it would put on the appearance of boiling, and by holding a piece of coin immediately above it, you would obtain a film of metal, showing you that it is submitted to the

highest temperature; but it does not appear to be oxidised by this process. From what has been said, you are conversant with its chemical properties, and you are also aware, that it is applied to a great variety of important purposes, useful and ornamental.

The salts of gold will not detain us long; we shall proceed to the consideration of them in the next Lecture, and the combinations of platinum.

FOREIGN DEPARTMENT.

EXPERIMENTS ON THE RE-UNION OR CICATRIZATION OF WOUNDS OF THE SPINAL MARROW AND THE NERVES.

BY M. P. FLOURENS.*

In my former experiments it has been seen, that different parts of the nervous system may be completely separated from the rest of the body, and still present a certain degree of life or action, so that they are susceptible of being united to parts from which they have been separated, and recover in certain cases the full exercise of their functions. One of the hemispheres of the brain, for instance, on being divided, instantly loses its functions; after the lapse of a certain time the incision cicatrizes, and the functions of the part return. This, indeed, is the case with all the parts of the brain and spinal marrow.

The experiments of Fortana on the re-union of the nerves are well known; they have been repeated by a great number of physiologists and by myself also. I divided the eighth pair on a cock. Two months afterwards, the wound being cicatrized, I again exposed the nerve on which I had operated, and found it a little enlarged, but the ends completely united. I thought it important to ascertain whether the inferior extremity had acquired, by its union with the superior, the power of again uniting if divided, which I found, by a repetition of the experiment, that it had.

The following are the results of my experiment, which contain some points that do not appear hitherto to have been noticed:—

The ends of a nerve that has been completely divided, can again unite.

A nerve that has been divided unites, and re-union also takes place if the nerve be again divided below the points at which the experiment was originally tried.

Two different nerves may be crossed so, that the inferior extremity of the one may correspond to the inferior of the other, and *vice versa*, and in this case also union takes place.

Lastly, if the divided extremity of the eighth pair be brought in contact with a cervical nerve, union takes place.

As to the return of the functions, I have not been able accurately to determine this point in some of my experiments; the functions have, in others, not been restored.

* Annales des Sciences Nat. Feb. 1828.

SPONTANEOUS COMBUSTION.

In the *Journal de Pharmacie*, there is a case recorded by Professor Rudolphi, of a man who suddenly felt a pain in the arm, similar to that produced by the blow of a stick, and immediately perceived in the same spot a small flame, which burnt his shirt. There is also the case of a girl mentioned, seventeen years of age, in whom a kind of blueish sulphureous flame appeared around the finger; the flame could not be extinguished by water; it burnt the clothing brought in contact with it, but could only be distinguished in the dark. The best electrometers placed in contact with the patient, presented no sign of electricity.

CONGENITAL DISLOCATION OF THE FEMURS.

A man, seventy years of age, was affected with retention of urine, for which he was admitted into the Hotel Dieu; the water was withdrawn, but the patient soon expired. He also appeared to have congenital dislocation of the femurs, on which account M. Dupuytren wished to examine the body with great care.

The thighs could not be separated from the body, without describing with the feet a segment of a circle; the trochanters were more closely approximated to the ilia, and much more elevated than in the natural state; the heads of the ossa femorum were situated higher, the knees carried more inwards, and the thigh shorter than usual; in fine, there was a total change of relations, and a marked difference in direction and length. From this change of the relations of the bone, it results, says M. Dupuytren, that the cavity destined by nature for the bone, either does not exist, or is more or less obliterated. From the change in length and direction, the points of insertion of some of the muscles are also changed. Some of the muscles being relaxed, others put on the stretch. The superior part of the thighs was enlarged, the trunk bent backwards, and the abdomen carried forwards; the pelvis, instead of being oblique, was nearly transverse; the buttocks soft and flabby, which must have been owing to the approximation of the insertion of the gluteï magni. Passing then

to the examination of this region, it was found that the glutæus magnus was relaxed, whilst the medius was put on the stretch. The glutæus minimus was destroyed; and the pyriformis, instead of being placed obliquely, as in the natural state, was on a horizontal plane; the gemelli and quadratus were extended, the adductors shortened. All the arteries (even those of smallest calibre) were ossified. The ligamentum teres was wanting on the right side, in the situation of the acetabulum; there was a small triangular cavity filled with adipose cellular tissue, on the left side; there was no trace whatever of this cavity on the right side; the head of the femur, which was rough, and considerably diminished in size, was situated in a superficial cavity, surrounded by a fibro-cartilaginous capsule, which was the only impediment to the still further ascent of the bone. On the left side, on the contrary, the head of the femur was more developed than in the natural state, and situated in a deep bony cavity. The left os ilii was as thin as a piece of writing paper, and perforated in some points.

There was great power of motion between the last lumbar vertebra and the sacrum; but, on examining this articulation, the only cause which could be discovered, was the relaxation of the cartilages.

SOFTENING OF THE WOMB.

In the last Number of the *Repertoire d'Anatomie*, (tom. v. p. 32,) there is a valuable communication on softening (ramollissement) of the womb, by Dr. Luroth.—The following are the principal points alluded to in the paper:—

1. By softening, when applied to pathological anatomy, is generally understood the diminution of cohesion in organic tissues.

2. This alteration has been observed, with few exceptions only, in all the organs and tissues of the body.

3. Softening of the uterus seldom takes place but in the pregnant and puerperal states.

4. This complaint may be divided into three stages; the first, where the organ is only very flaccid, relaxed, soft, and often infiltrated with serum, but without any very remarkable alteration of structure; the second, where the uterus is very friable, and its structure altered to such a degree that its tissue presents but very weak traces of organisation; and the third, in which there is a liquefaction of the part, or reduction of it, into an inorganic pulp.

5. If the softened parietes of the uterus are also thinner, the complaint may be termed atrophy of the organ.

6. The symptoms to which softening of the womb gives rise are vague and uncertain; additional cases are wanting before they can be determined with precision.

7. Softening of the uterus, and even the disposition to this alteration, may cause difficult or unnatural labour.

8. Rupture of the womb may occur with this alteration, particularly if the parietes are thin as well as softened.

9. In most cases, this affection is produced or favoured by an inflammation of the organ; it is more rarely a primitive alteration, dependent on diminution of the vitality, and an anomaly in the nutritive action of the affected part.

10. The inflammation which precedes the softening has a tendency to effect a prompt disorganisation, and belongs to that class which has been termed by some authors asthenic, putrid, &c.

11. Putridity of the uterus may be regarded as a kind of softening, and is generally seated in the neck of this organ.

12. Termination by resolution in putridity, as indeed in softening generally, is rare.

13. The diagnosis of these affections is difficult; an examination per vaginam, however, affords material assistance. The prognosis is always unfavourable, and the result generally fatal. No curative measures which have been devised appear to have any effect.

AMPUTATIONS.

Some Observations on the Comparative Merits of the different Methods of performing Amputations. By GEORGE BUSHE, M.D., of the Royal College of Surgeons in Ireland, and Assistant-Surgeon to the Forces.

It is not my intention to enter into a historical inquiry of the progress and improvements that have been made in this branch of surgery, or to mention the accidents and diseases which require amputation; it is merely my desire to show the comparative merits of circular and flap operations, and the advantages and disadvantages of the different methods of executing them, which, as I shall hereafter explain, will principally depend on the state of the limb, and nature of the malady requiring amputation.*

* Nothing can be more empirical, than making disease subservient to remedies; but though truly unscientific, we every day see men who should know better, degrade themselves by following this line of practice. For example: one oculist will bleed, &c., in all cases of ophthalmia; form all artificial pupils on the principle of Gibson, and, in every case of cataract, operate with a

If we view amputation in a proper light, we shall soon learn that it is an operation of considerable magnitude to the patient, involving him in dreadful suffering, and if not well executed, consigning him to certain misery for the rest of his life. Although these are facts well-known to the most humble practitioner, it is by no means uncommon to see a man, who cannot decently dispatch the most trivial surgical operation, undertake the performance of amputation. His first object is to girt the limb firmly with a tourniquet, (by which immediate death from hæmorrhage is avoided,) and the next, to dismember the unfortunate patient, well bearing in mind, that anatomical knowledge can no more serve him than the best operator, as his great object is to divide every tissue. The vessels being secured, and the wound dressed, it matters not whether the patient has suffered from an ill-conducted and protracted operation, or whether he recovers with a sadly formed stump; at all events, the surgeon, who may have thus tampered with human blood, and deserves the scorn of all honest men, obtains amongst his patients a celebrity of the very first rank, for having achieved what to them appears the most serious of all surgical operations. Hence it is, that we every day see men destitute of the slightest surgical dexterity, anxiously looking out for cases upon which they may work a character, thus sacrificing every honourable feeling, and violating all the bonds of humanity; nay, becoming the very workers of cruelty, and stigmatising a most laudable profession, for what? nothing else than sordid ambition. This picture is but too truly delineated, and it is much to be desired that such men would rather employ themselves in obtaining information, which could not fail to excite emulation amongst their cotemporaries, lead the better informed part of the profession to respect them, and compel the public to seek at their hands, that aid which can only be obtained from the well-informed practitioner.

The circulation in the limb about to be removed is commonly restrained by the tourniquet; and to whatever slight deviation has taken place from this established custom, we are principally indebted to Mr. Liston of Edinburgh, who has written a concise and useful paper on amputation in the Edinburgh Journal; and although I cannot altogether agree with that justly celebrated operator, who, when speaking of the tourniquet, writes as follows: "It is, in my opinion, of no use, and, in many cases, worse than useless;" still I wish to give him every credit for vast improvements in this depart- of surgery; however, to the former part of his statement I cannot at all acquiesce, but the latter is consonant with my own views. It was inculcated by Mr. J. Bell, that it required considerable pressure to restrain the current of blood through arteries of any considerable magnitude; but this opinion has met with its desert, and has been totally annihilated, particularly by those army surgeons, who had the most abundant opportunities of putting it to the test of experiment; and Mr. Liston has not failed to prove to us, that the pressure of an assistant's finger is sufficient to prevent a column of blood passing through an artery, no matter what calibre it may possess. But whilst in hospital practice, or private life, we can procure proper assistants, and personal safety, during the operation, it must not be forgotten, that the army surgeon on the field of battle, can frequently neither obtain a proper assistant, nor personal safety, during the execution of many hazardous operations, therefore to him the tourniquet becomes absolutely necessary; and, on the same principle, I think Larrey acted judiciously, in securing the inguinal artery with a ligature, before he proceeded to amputation at the hip-joint. In this light, therefore, I look upon the tourniquet as a most useful instrument to the military surgeon; but though it cannot be doubted, that where it is employed, more blood is lost during the operation, than when the vessel is compressed by an assistant; this, instead of being detrimental to the soldier in rude health, must rather serve to prevent that excitement, which often succeeds to primary amputation; so that, on this score, the naval or army surgeon can raise no objection to it. But, as I before stated, I entirely agree with Mr. Liston, when he says, "that in many cases, it is worse than useless," because the greater part of the returning blood is lost; and as many patients upon whom secondary amputation becomes necessary, are greatly exhausted by suffering, and the duration of disease; the loss of even a small quantity of blood is an object that should be attended to, and avoided as far as possible. Luckily, such cases are the subjects of operation in hospitals and private life, where

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needle; on the contrary, another man will use solutions, and ointments, as the only remedies for conjunctival ophthalmia; make pupils as recommended by Cheselden, and even attempt to extract membranous cataracts. In like manner, one surgeon is so devoted to the double circular incision, that he performs no other, though his coadjutor, in the same hospital, is bigoted to the double flap operation, and never amputates but after this manner. But, the unprejudiced practitioner will look to the nature of the case, and adjust means accordingly; for only by thus acting can he be of public utility, and honestly beneficial to himself.

suitable assistants can be procured, therefore, I would lay it down as a maxim, that, save in the field of battle, the tourniquet should be dispensed with in all cases of amputation. It may not be useless here, to caution those to whose lot the compression of the greater arteries may fall, not to be over desirous to use great force; for it is well understood, that a moderate degree of pressure is sufficient to check the sanguinous current; and that nothing can be more painful to the patient, or tiresome to the assistant, than strong force long continued; and further, there is no doubt but that moderate pressure will more certainly curb the arterial circulation; for, from the great elasticity of the larger vessels, they have a tendency to elude force, though directly applied; this fact was fully demonstrated to me two years since, when the brachial artery was consigned to an over anxious assistant, whilst I amputated the arm. In this case the vessel rolled from beneath his fingers, so that I found it necessary to desist, until he again (with more caution) resumed his duty. Finally, the operator should not only be satisfied that his assistant perfectly understands how to compress the vessel, but also that he possesses sufficient presence of mind to continue his calling during the operation. I am particular in this statement, from a circumstance that occurred some time since in my own practice; viz. when about to remove a lower extremity, above the knee, I charged a person with the femoral artery, whom I supposed equal to the task; but when I transfixed the limb, he suddenly let go his hold, and the consequence was, an alarming flow of arterial blood; so that the expedition and evenness of the operation were considerably retarded, by want of capacity in my coadjutor, to assist in a common amputation of the thigh.

The double circular insection is that now generally adopted by European surgeons; and though a few years since, considerable exertions were made in France and Germany, and still more lately in Edinburgh, by Messrs. Liston and Syme, to establish the double flap operation, yet, with a very few exceptions, a strong prejudice exists against it, and it is not common, even now, to see hospital surgeons adopt this line of proceeding.* This, at first, might lead the inexperienced to entertain but a low idea of its utility, and to practise the circular operation; but I firmly assert, that this prejudice has not arisen from the defects of the flap operation, but an unheeding attachment to the established mode, or circular incision. The natural feelings of man lead him to form prejudiced opinions on matters to which habit has long accustomed him; but it is to be hoped, that the rising race of surgeons will, in some degree, deviate from the precepts of their fathers, and, by strict experimental inquiry, seek improvement in this most essential branch of operative surgery. Thus actuated, I commenced; and it has since been my lot to have performed many flap operations in public hospitals and private life, in the presence of men fully competent to judge of their advantages and disadvantages; and the very favourable termination of the majority of these cases induces me now to say, that the double flap operation appears possessed of the important advantages laid down by Messrs. Liston and Syme, and that it is adaptive to the greater number of cases. So deeply am I impressed with these sentiments, that it seems to me a matter of surprise, that before now it has not broken the chains of prejudice, and taken its proper place.

As above stated, the advantages of double flap amputations have been clearly and fully explained by Liston and Syme, therefore I consider it quite unnecessary to enter into a detail of them in this place; save that I feel myself called upon to refute an objection that has been started, since the papers above alluded to were published, viz., that from the great extent of surface exposed, union, by the first intention, is not so likely to take place as after the double circular insection; and hence sinuses and tedious suppuration more commonly follow it. To me this objection appears so ill founded, and to be the offspring of such shallow reasoning, that I deem it unnecessary to occupy more time in opposing it than whilst I write,—that the surface of a well-formed flap stump, is less than that of a circular one equally well performed; by the diameter of the angles above and below (or before and behind) sacrificed for the rounding of the flaps; however, I do not hesitate to say, that tedious suppuration, and even sinuses, too frequently follow flap amputations; but these consequences are only apt to ensue when the operator, desirous of making a good stump, has made the flaps too long and pendulous, an error of serious magnitude, but of very common occurrence,* and it is my belief, that adhe-

* At Guy's Hospital, it is most commonly adopted in respect to the thigh.—Ed. L.

* When I perform the double flap operation, I make the flaps shorter than I have observed in the operations of others; but I always retract the soft parts at their bases, as far as possible, by which expedient the extent of surface is diminished, the stump rendered more plump, and the cut extremity of the bone, or bones, more completely imbedded in muscle.

sion will more frequently follow well-executed flap than circular operations, for the cut surfaces can be kept more easily in contact, whereas, after the circular incision, (no matter how well performed,) the soft parts must be more or less stretched, and a cavity must necessarily exist anterior to the extremity of the sawn bone, which will become a reservoir for exuded fluids, that can obtain no depending outlet.

With respect to the best method of performing flap amputations, there has been a considerable variety of opinion, but the differences may be classed under two heads, viz., the propriety of cutting from within outwards, or from without inwards; the former being principally advocated by some French surgeons, especially Lisfranc; and in this country it has met with strenuous supporters in Messrs. Liston and Syme.—The latter method has had its advocates chiefly in Germany, amongst whom may be mentioned the celebrated Langenbeck, but it has also been practised by some of our military surgeons in the Peninsular war. These differences require much consideration, and, in opposition to high authority, I fearlessly say, that there are cases where one plan is preferable to the other; and I cannot help thinking, that their misapplication, added to the difficulty of their performance, constitute the chief and true objections to their more frequent adoption. In proof of this statement, I do not hesitate to say, that those who have witnessed amputation at the hip-joint, performed in both ways, will side with me, when I write, that the limb can be removed with less danger of hæmorrhage, where the incisions are made from without inwards, as then the operator has it in his power to secure the vessels before the amputation is performed, should the loss of blood demand it. Again, I assert, that the advocates for Langenbeck's method, in the thick part of the thigh, have preferred it, because, where they have seen Lisfranc's mode adopted, the integuments have been too short to cover the divided muscles, and this consequence of transfixing, I have observed myself in primary amputations, especially where the limb has been muscular. I have also witnessed a still greater defect in this respect in two cases, (one of which occurred to myself,) where, from untoward circumstances, primary amputation had been postponed beyond the usual time, so that the tissues had become tumefied from serous and lymphatic effusions; but, in all such cases, by first dividing the integuments and fascia with a scalpel, they can easily be retracted by an assistant for the extent of an inch or more; then the transfixing knife may be employed for the division of the muscles, &c., with safety, expedition, and success; but in cases where the bulk of the extremity is not great, nor, on the contrary, emaciated or flaccid, (which is oftentimes the case in old worn out persons,) and the parts to be divided are in a healthy condition, transfixing has, in my hands, been most successful; and, on looking to my notes, I find that I have performed eight amputations after this manner.

I have now said much concerning flap operations, but I would not wish to be understood as appearing altogether to condemn the circular incision; for within the last month I have amputated the arm of a delicate female, after the manner of Dupuytren, viz. with a single circular incision, because it was much emaciated, and very flaccid. And from the success of this and another case, that I operated on in the same way, I have but little doubt as to the superiority of this method in flaccid and spent members; for when the soft parts have thus degenerated, union by the first intention rarely takes place. The double circular incision is generally abortive; I have seen more than one case where bad suppuration has followed it, the stump open, and the bone protrude, though there has been abundance of skin, hanging loosely over the suppurating surface. After the double flap operation, the consequences are nearly as unfavourable, and should the wound heal, the stump will be pendulous and flabby. When this operation by the single incision is determined on, an assistant should retract the soft parts to their greatest extent, before the knife is applied; and after the bone is exposed, the muscles should be retracted still farther, before the saw is employed. After the removal of the limb, the operator will find it almost impossible to bring the edges of the divided integuments into coaptation; but this is by no means necessary; "it is directly hurtful," and, indeed in general it will be found sufficient, through the medium of one or more adhesive straps, to give the lips of the wound a proper direction for future coaptation, which, as the tension is reduced by moderate suppuration, and the muscles surrounding the bone begin to decrease in bulk, will be rapidly effected.

With respect to the method of amputating by the double circular incision, there is but one part where I would recommend it in preference to any other; and this is below the knee, in the upper third of the leg, for here there is no necessity for a full cushion to support the weight of the body, and I can fairly say, that I never saw a case where a flap was formed from the calf of the leg, in which considerable retraction of the remaining muscles did not ensue, attended with great induration of the flap, separation of its edge from the skin on the front of the tibia, sometimes exfoliation of the bone, and ge-

nerally tedious suppuration. Nor can I speak much in favour of the method recommended by Mr. Syme, viz. of forming an anterior and posterior flap; for before I saw his paper, I once performed this operation in the presence of staff-surgeon Hume, and regret to say, that my success was so indifferent, that I have not since repeated it.

After saying so much on amputation, it may not be irrelevant to offer a few concise remarks on the dressing of stumps.

It is not a little curious, that even now, in some of the first hospitals in Europe, surgeons should continue to envelop stumps in weighty bandages, compresses, dressings, &c.; however it is gratifying to observe, that this practice is on the decline, and that a new light dawns on the treatment of wounds after operation; for it is known to every pathologist, that a high degree of inflammation has a tendency to prevent adhesion; and those dressings which must have the effect of preventing evaporation, cannot fail to excite a high degree of inflammation, thus directly operating against union by the first intention. In former times, sutures were employed after amputations, but they are now, with a very few exceptions, abandoned; and indeed most practitioners dispense with them in all wounds where they find it possible, asserting that they produce tension, erythema, and ulceration. This opinion is, in part, correct, and it is my belief, that when sutures are employed to bring parts into contact, they generally operate as above described; but when used only to keep parts in coaptation which easily adjust themselves (as flaps after amputation,) they create much less irritation, and by their retaining the parts more accurately in position, answer the intended end better than adhesive straps, which but too frequently give way in consequence of the exudation from the wound, by their bulk prevent evaporation, and, from the resin they contain, produce cutaneous irritation. Moreover the very act of applying these straps, bears the soft parts back against the bone; and I will venture to say, that those surgeons who may form good stumps, and instead of adhesive straps, employ three or four points of suture, will find the statement I have made in their favour, correct. After amputation, I merely place a broad strap of adhesive plaister round the limb, above the wound, with a view of supporting the muscles, and preventing their retraction; then I insert a few points of suture, and place a fold of old linen, moistened with cold water, on the face of the stump. Many surgeons who have seen me thus act, have remarked that the lips of the wound between the sutures were not sufficiently in contact; but by exposure of the stump after ten hours, I have proved to them, that the succeeding inflammation produces the perfect apposition of the intermediate edges, so that, should the number of sutures at first appear insufficient, the experience of one case will convince any one to the contrary. From the third to the fifth day, I generally remove the sutures, and in their place apply a few narrow adhesive straps; and if any considerable degree of suppuration should ensue, a light compress and roller, wetted with a lotion of camphorated spirit, have appeared to me very desirable.

Chatham, March 10th, 1823.

ON THE NATURE AND TREATMENT OF DIABETES.

BY J. PENKIVIL, M.D. SOC. REG. MED. ED. SOC.

The pages of your highly useful journal have lately been so much taken up by various discussions on that very singular and interesting disease, Diabetes, that I am rather unwilling to occupy that space which might give room for more valuable matter. However, with your permission, I will venture a little. The zeal with which the advocates of their various theories espouse their cause, however fanciful and amusing, is still productive of good; for by collision the truth is elicited. I will not, therefore, say with your correspondent Dr. Alexander, that the late discussion in the Westminster Society has been conducted "with so little credit to itself or benefit to its members," but will say, at least, it has given rise to many useful animadversions on a very obscure disease. I do not consider that practice "empirical" which is founded on the best reasoning, on what is best known on the subject, notwithstanding the proximate cause may not be clearly understood. Whether we are, with the celebrated Gregory, to consider the proximate cause as that which, when present, constitutes the disease, and which, when removed, at the same time removes the disease; or, with the more modern, define it to be that state of constitution which gives rise to the symptoms of disease, which, in fact, explains nothing, as we have then to learn what this state or condition is. These things are of little consequence to the useful and active practitioner, who, in spite of the charge of being "empirical," must attack his foe by the best means in his power, nor bewilder himself with the conflicting theories about the proximate cause; for if he attends to Mead, the proximate cause arises from the state of the lungs; if to Cullen, it arises from spasm;

if to Rollo, from depraved assimilation; if to Darwin, retrograde absorption; if to Monro, from disease of the lymphatic glands; if to Hope, from deficient nitrogen. The latter may be the most rational in his theory, since that kind of diet, and those remedies which contain the most nitrogen, seem to be the most beneficial. Yet after all, admitting this, may it not be asked again, what is the cause of this deficiency of nitrogen? And if we could trace this cause, it would then turn out, that this deficiency of nitrogen, was, in fact, an effect only of the newly discovered cause. So much for the proximate cause. The treatment is what is of most consequence to ourselves and our patients. This disease is comparatively so rare, that our "incerta ars" has really not fair chance. Though I am an old practitioner of nearly 30 years standing, and was a general practitioner in the neighbouring county about 28 years, yet not above three or four cases have come under my cognisance; one of which had been treated after Rollo's plan, before it was subjected to my care, and the cure was completed by bleeding and other evacuants in conjunction. So that, notwithstanding the vituperation of Dr. Alexander, I am inclined to think Dr. Ayre was by no means out of the way in combining both modes of treatment. What inconsistency is there in lessening increased action or excitement, whether local or general, by abstraction of blood, and then supplying by diet and medicine that deficiency of nitrogen, which is supposed to occasion, or be occasioned, by this disease? If Dr. Alexander will not allow Dr. Ayre's theory, that there "exists an exaltation of the vital action of the secretory vessels of the kidneys, analogous to inflammation in other structures," which he is pleased to term an unhappy definition, but which to me seems to express facts, or what Dr. Ayre deems to be facts, in as happy, significant, and appropriate terms as can be selected; still he must allow there is increased action, whether it be inflammatory or not, and where there is increased action, there must be a greater determination to the organ affected, and consequently a congested state of its vessels. Now what so likely to relieve this congestion as abstraction of blood? Nay, does it not seem called for? Having thus relieved the organ itself, it is most rational to turn our attention to the system in general; and as that grand emunctory, the skin, seems to be in a state of inactivity, being generally arid, and sometimes even scaly, every means calculated to rouse its vessels into action should be had recourse to, such as the warm bath, frictions, and internal sudorifics. Other evacuants too, will prove useful auxiliaries; but as the skin sympathises so much with the kidneys, or rather, perhaps, the kidneys with the skin, as is evident from cold, terror, and other affections of the mind, &c., we shall be most likely to remedy the disease by restoring the balance to the skin, preponderating in this instance, to the kidneys. Having done this, can there be any thing more rational than to throw in the nitrogen, which supplies the deficiency occasioned by diseased action, and, at the same time, affords nutrition to the system, previously debilitated by the disease in question, and the remedies necessarily used for its cure? I will not go the length of Dr. Ayre's theory, which maintains the disease to be purely local; though the local affection is what I think we have first to deal with. Whether Dr. Ayre be one of the "cane carrying" gentlemen or not, I cannot tell; but his *double-headed* treatment appears to me perfectly rational. For I contend, that unless the organ affected be first relieved, there will be little probability of the complaint being removed. And is it not owing to this not being attended to, that comparatively few in this disorder have been cured? By practitioners attending merely to constitutional symptoms, the diseased action in the kidneys has been allowed to be perpetuated, till what was first functional became structural; till not merely the kidneys, but other viscera take on diseased action, the whole system becomes engaged in it, and the patient becoming hectic, sinks into the grave. I make no particular allusion to the case of Mr. S., which has given rise to the dispute between Dr. Ayre and Dr. Barry, because the patient seems to have got well in the order I propose the disease should always be treated; that is, Dr. Ayre relieved the organs oppressed, and Dr. Barry seems to have supplied the system with nitrogen, or, in other words, completed what the other had so judiciously begun. So that the patient is equally indebted to both. But one word more with Dr. Alexander, which will be taken, I hope, as I intend, courteously. This gentleman having handled Dr. Ayre pretty roughly, and setting aside other theories proposed by other great men, presents us with his own opinion respecting diabetes; and here the bugbear debility is brought into the field, which has so long been the scarecrow of the profession, and which I had hoped never to have seen introduced again, to frighten the young and the timid. Debility is the basis of his theory, and whilst the learned are puzzled to this day to discover the proximate cause, he has readily found it in the "depraved condition of the whole body!" Thus when a man's constitution has been worn out by the long continuance of this disease, this debility, the result or effect probably of many year's suffering, is converted into a *cause*! That is, the disease

is its own cause. Is this not a transposition of cause and effect? If debility were really the cause, since there are such innumerable sources of debility, which so frequently and constantly spring up in the human constitution, should we not as constantly meet with this disease? Whereas it is confessedly a rare disease. Dr. Alexander having laid debility as the foundation, the superstructure raised thereon, namely, *his opinion*, is ornamented with three divisions or compartments, 1st, he says, "I believe the complaint to be essentially a constitutional and not a local one." That the constitution in the progress of disease becomes affected, cannot be denied; but were it only constitutional, why is it one organ alone becomes involved, which circumstance is necessary to constitute the disease, and without which it could not be recognised? Were it like gout or any other constitutional disorder, it would be manifested, not in one organ alone. That other tissues become affected afterwards, is another matter, and does not relate to the present argument. 2d. The Doctor proceeds, "I look upon the mellitic urine as a mere effect of the general disorder." That this peculiar state of the urine is the consequence or effect of diseased secretion, must be admitted, but not, I imagine, the effect of the cause alleged; for if debility were the cause, or to use his own words, "a depraved condition of the whole body," what manufactories of sugar should we not find in the innumerable squalid, depraved habits, constantly stalking in our streets! Surely in this case we need not be indebted to our colonies for our supply of saccharine matter, since every retreat in the various avenues of the "great city" would yield its hogsheads! 3d. Dr. Alexander lastly says, "I deem all local remedies, such as cupping, blistering, &c. in the same light that I should regard opium being applied to relieve cramp in the legs of a person suffering under cholera; or, in other words, as treating effects, and not the causes, which produce them." Now if the kidneys in this complaint be the peculiar seat of the disease, surely remedies to relieve these particular organs, are not to be viewed in so insignificant a light; not as opium in cholera, however important its use, merely to relieve spasms, which are amongst the urgent symptoms, but to remove the congested state of a highly excited organ, without which, I think, general remedies would be less likely to take effect. Every one, Sir, in occupying the pages of your useful journal, or the attention of your professional readers, should ask himself, what benefit do you propose by your observations; or *cui bono*? My object in addressing you, is to show how unsatisfactory Dr. Alexander's theory is, at least to my mind, but more particularly the treatment it would lead the young and inexperienced practitioner to follow. I do not pretend, nor is it necessary at this time, to enter into a particular history or treatment of this disease, but merely as an outline of practice, beg to offer my opinion, that the organs affected call for first and prompt relief by local and general evacuants, and then the constitutional remedies already alluded to, will be judiciously, and, most probably, successfully administered.

Yeovil, April 24th, 1828.

THE LOST PELVIS.

To the Editor of THE LANCET.

SIR,—In answer to a letter, signed J. L. Fenner, published in No. 243 of THE LANCET, I have only to remark that, as I cannot doubt Mr. Fenner's statement, of his having been told that "repeated applications were made in vain" to me, for the pelvis which was unfortunately destroyed while in my possession, he has been very much *misinformed*. I never saw Dr. Davis but *once*, from the time I examined the body, to the time he was told that the preparation was destroyed, and that occurred a day or two after I took the pelvis home. So far as I can remember, I met him then at his own house, at one of his morning lectures, when he was told that the pelvis was macerating. If I am wrong, with respect to the place, Dr. Davis is quite at liberty to set me right; but, as for any applications having been made to me for the preparation, Dr. Davis must know very well, that there were none made. Mr. Fenner has been equally misinformed, that "some months had elapsed, when this wonderful story was given in explanation." I informed Dr. Davis of the circumstance the first time I met him, and that, to the best of my recollection, occurred within the period mentioned in my former letter. If there was any neglect, on my part, in not acquainting him sooner with the circumstance, I can only attribute it to my time being too much occupied about other business. Mr. Fenner may rest assured, that had I known the character I had to deal with, I should have acted very differently; for I would never have had anything to do with either Dr. Davis or his pelvis. With regard to Mr. Fenner's other remarks, I beg to refer him to my former letter, wherein is stated everything I know about the pelvis in question. If he disbelieves my own statement, I then refer him to a disinterested witness; and should he doubt his veracity, too, he must remain an unbeliever, for I have no stronger proof to adduce. Yours, &c.

Hertford May 4. JOHN DAVIES.

THE LANCET.

London, Saturday, May 17, 1828.

THE remarks which we have made from time to time on the false or exaggerated pretensions of Scotch Medical Graduates, have excited no slight degree of irritation in the quarter where such remarks could not fail to prove unpalatable. There are few people under the sun, or the clouds, who have more exalted notions of their own physical, moral, and intellectual pre-eminence than the Scotch, and it follows, naturally enough, from the predilection which they entertain for themselves, that there are few people more impatient of animadversion on their national failings, or even on such peculiarities, in point of education, manners, or other adventitious circumstances, of which the merit may appear questionable to their neighbours. *Noli me tangere*, is the Scotchman's motto; not in that sense wherein it might be taken to communicate a friendly warning, but in that hostile, uncompromising spirit which breathes defiance to all who venture to call in question the immeasurable superiority of his country to all other portions of the civilised world. In the eyes of a true Scotchman, all that is most valuable in science, in literature, in the arts, in manners, in language, and in civil institutions is centered in that part of the British dominions, where he has had the singular distinction to be begotten. The Scotch doctors have not been backward in appropriating a due share of that superiority to which men of all callings and professions, who have been bred in the northern part of the island, are wont to lay claim. For a long period they possessed exclusively the control of the medical press in this country, and, where interest as well as national predilection prompted them to be energetic in the praise of Scotch practitioners, it is not surprising that they should have omitted no opportunity of descanting on their own perfections. Edinburgh was uniformly represented as a school of medicine *par excellence*, and a discreet silence was observed as to the mode in which medical degrees were obtained in the less distinguished and more venal universities of Aberdeen and St. Andrew's. THE LANCET is the first and only medical journal which showed that the pretensions of the Scotch doctors to superior attainments were founded in delusion, and that the public have in reality no security whatever for the competency of Scotch medical graduates, as such, because THE LANCET is the only English medical journal free from Scotch influence, and not subjected to Scotch control.

The wrath of the Scotch graduates, at the exposure of their empirical pretensions, is proportionate to their inability to gainsay the facts on which that exposure was founded. It is impossible to deny, that up to a very recent period, any man could, by transmitting the sum of fifteen or twenty pounds sterling, to the proper functionaries at the universities of Aberdeen or St. Andrew's, obtain, by return of post, a diploma, wherein those conscientious functionaries solemnly certified the ability of their correspondent to practise surgery and medicine. It is impossible to deny, that a large proportion of the Scotch doctors practising in England, who affix the initials M.D. to their names, and who affect to look down upon English surgeons as an inferior class of practitioners, have, in point of fact, obtained their diplomas in this manner. Neither can it be denied that, even as regards the system of medical education at the universities of Edinburgh and Glasgow, up to a very recent period, human dissections formed no part of the course of studies pursued in those institutions; and that, consequently, the opportunities of acquiring a knowledge of anatomy, the sole basis of medical science, were inferior to those possessed by medical students in this country. The Scotch graduates do not attempt to

deny these facts, but they vehemently express their indignation, at the inference which has been drawn from them. It is an insult, they say, to the Scotch nation, and a violation of the articles of Union, to question the ability of Scotch medical graduates, no matter how their degrees are obtained—or to subject such persons to examination, before they are permitted to practise within certain limits of the metropolis.

This is the main argument in a pamphlet which has been recently put forth under the title of "A Blast from the North, in vindication of the Medical Graduates of Edinburgh, against the invidious and calumnious aspersions cast upon their Literary and Professional Education." As the pamphlet is said to be regarded by the Scotch graduates as a production of great ability, exhibiting all the strong points of their supposed case against the London College of Physicians, we may, perhaps, on a future occasion, bestow upon it rather a detailed examination.

Our readers will do us the justice to admit that we have been loud and frequent in our denunciations of the "Apothecaries' Act;" a document indicative of nothing but the ignorance and cupidity of those by whom it was framed. The following report of a short discussion, which took place in the Court of Common Pleas, on Wednesday last, shows the manner in which the rights of British surgeons have been sacrificed. So, a member of the College cannot legally recover payment for medicines and attendance, because it was a case of Typhus Fever! This is the march of intellect truly.

We shall institute an inquiry into all the particulars of the transaction, and, if possible, resume the subject in our next number.

COURT OF COMMON PLEAS, WEDNESDAY.

[Sittings in Banco.]

Ellison v. Adden.—This was an action brought by the plaintiff, who is an apothecary, to recover the amount of his bill from the defendant, for certain attendance as an apothecary.

The cause was tried at Westminster, before Mr. Justice Burrough. It was then objected, that the plaintiff could not recover consistently with the provisions of the 55th Geo. 3, which were, "that no apothecary should be allowed to recover any charges claimed by him in a Court of Law, unless such apothecary should prove at the trial that he was in practice as an apothecary prior to the 5th of August, 1815, or that he had obtained a certificate to practise as an apothecary from the Master or Warden of the Company of Apothecaries." It appeared, that the plaintiff had not practised as an apothecary prior to August, 1815, nor obtained a certificate from the Apothecaries' Company. The Learned Judge was of opinion that the words of the statute were imperative, and therefore nonsuited the plaintiff.

Mr. Serjeant Taddy in the next Term obtained a rule to show cause why a new trial should not be had, on the 29 section of the above Statute, which made an exception in favour of members of the Royal College of Surgeons. Cause having been shown,

The Chief Justice now gave it as his opinion, that the Learned Judge who tried the cause had acted properly. The defendant's illness in this case was such as would not require the attendance of a surgeon, as it was a typhus fever. It was exclusively in the practice of an apothecary. The rule for setting aside the nonsuit must therefore be discharged. Could it have been proved that the medicines had been administered to accelerate some surgical case, he might have entertained a different opinion.

The other Judges concurred in the judgment of the Chief Justice.—Rule discharged.

An advertisement will be found, on the cover of our present Number, announcing a subscription for the protection of persons already convicted of having had disinterred subjects in their possession; and, of course, for the protection of those individuals, who may henceforth be found *guilty* of the same offence. This project is most absurd and impolitic, it is an insult to the legislature, and to common sense. Is not parliament at this moment, through the medium of a most intelligent and active committee, investigating the state of the law relating to dis-

sections? Surely it is not prudent, then, to bid defiance to the legislature, by upholding those who violate the law. If the law, as it now stands, be unobjectionable, why apply to parliament? On the other hand, if if the law really be objectionable, and goes to the extent of entirely prohibiting dissections, why attempt to lessen the appearance of its severity, by endeavouring to prove that it is *legal* to dissect a body which had been *illegally* disinterred. Let the decision, therefore, of Baron Hullock stand; a decision, we believe to be strictly correct; dissection *is prohibited*, and therefore the interference of parliament becomes indispensable. Rescind or palliate that decision, and the legislature may deem its interference to be unnecessary.

Transactions of the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland. Vol. V. pp. 576; Dublin, 1828.

The present volume contains twenty articles, some of them of great length. We shall commence with Dr. Mills's communication on the nature of hydrocephalus. The author of the paper makes some brief remarks on the importance of the study of morbid anatomy to the accurate knowledge of disease; truly observing, it is only by comparing the symptoms which occur during life with the morbid appearances discovered on dissection, that we can ever arrive at certainty in medical investigations. Hydrocephalus is a disease of very frequent occurrence, and extremely fatal. Dr. Coindet states, that 20,000 children die annually in France of this disorder; and from the Annals of the Universal Dispensary of London, published by Dr. Davis, it appears that 8 out of 45 died from hydrocephalus. Dr. Mills relates several cases with dissections; but we have not space for more than three.

"*Case of Acute Hydrocephalus—Post-mortem Examination.*

"Jan. 7, 1815. A. S., five months old, labours under the following symptoms—strabismus, dilatation of the right pupil, contraction of the left pupil, which is insensible to the application of light, but the right seems still to possess sensibility; the head and neck are bent backwards. The child is unable to raise its head, which to the assistant feels extremely heavy; sighing and moaning; spasms of the upper and lower extremities; skin cool in the morning, but hot in the evening, when the face is flushed, and the pulse accelerated; bowels free, and easily opened by cathartics; fæces yellowish. The child sucks, and often *pushes* the nipple with great anxiety; also presses the gums together, as children do whilst teething. Vesic. vertici. pulv. ex cal. et P. Jacobi. This child has been ill about a fortnight; the first symptoms were, a screaming in the night, heaviness, and some uneasy motion of the head, followed by a grinding of the gums, by spasms of the muscles of the left hand and arm, next of the right hand and arm, and finally of the lower extremities. In the first instance two or three leeches were applied to the temples, and ol. ricini was administered. Calomel and James's powder, the tepid bath, and frequent incisions of the gums have been prescribed during the last ten days by the physician in attendance.—8th. Nearly as yesterday; little effect from the blister; bowels free; spasms frequent, they are abated by the bath. Vesic. occipiti repet. pulv.—9th. Both pupils considerably contracted, vision lost, eyelids paralytic; pulse 150, and hard; difficult deglutition; gums again lanced, but no tooth is discoverable.—10th. About two hours after yesterday's visit, the child died.

Dissection.—Considerable dilatation of the sutures of the cranium. Dura and pia mater more vascular than usual. Plexus choroides highly vascular, and loaded with blood of a florid hue. On cutting into the ventricles, there was a gush of limpid fluid; this fluid amounted to six ounces. The walls of the ventricles were more pulpy than natural; with this exception the brain was found sound. Gall-bladder contain about ʒii. of greenish bile, of a natural viscidity. Pericardium contained about ʒii. of serous fluid. On cutting the gum, no tooth was discoverable."

"*Case of Chronic Hydrocephalus—Post-mortem Examination.*

"April 28th, 1816. Mr. W.'s child, aged seven months, labours under the following symptoms:—frequent vomiting and screaming, thirst, tossing of the arms, body, and head, restlessness, and emaciation. Pulse

102, skin hot and dry; tongue foul; countenance pale and sallow; left eyelid half closed; abdomen tense; contraction of the pupils on the application of light; scabies of the head. This child has been ailing for three months; the illness being supposed to proceed from a want of breast milk in the nurse, a second was procured. Four children of this family died during infancy; two were supposed to have been carried off by bilious complaints, one by convulsions, and one by the effects of teething. Habt. pulv. ex cal. et scammon. fotus abdominis. 29th. Three dejections of a yellow colour; vomiting less frequent; restlessness, tossing of the arms and head; refuses the breast; drinks gruel; moaning and screaming. Vesicat. Vertici.—30th. Eyes fixed; film over the sight; vision impaired; pupil of the left eye more dilated than that of the right; skin cool; pulse 106; screaming; fæces greenish; abdomen soft; thirsty, and drinks with eagerness; no vomiting. Vesicat. occipiti; cal. gr. i., tertiis horis en. purg.—May 1. Symptoms much as yesterday. Cr. cal. et en. purg.—2d. Died early this morning.

Dissection.—Bones of the skull unusually vascular; dura mater highly vascular; longitudinal sinus turgid with blood. On cutting into the cerebrum, a great number of points are observable. The parieties of both lateral ventricles, and those of the third ventricle, are in a state of great turgescence from venous blood. Plexus choroides is more vascular than natural. About three drachms of a serous fluid are discovered in the lateral ventricles; cerebellum and part of the spinal marrow are preternaturally vascular. About half an ounce of a watery fluid is found at the base of the cranium, and in the theca spinalis. Liver of a natural appearance; gall bladder nearly filled with a light greenish bile. Intus-susceptio in three different portions of the small intestines.

Case of recovery from supposed Hydrocephalus.

"In the month of September, 1813, I visited a fine boy, six years old, who complained of shooting pains in the forehead and occiput, of sickness, retching, and want of appetite; his temples throbbed; his face was alternately pale and flushed; the heat of the forehead, often bedewed with perspiration, was intense; the bowels were confined, and the urine high coloured; there was (were) restlessness, sighing, and moaning; the pupils were dilated and very sensible to the application of light; the eyes were suffused, and the countenance was expressive of pain and distress. The pulse varied in strength and regularity, and in frequency, from about 120 to 130. This state of excitement had existed for six or eight days, and was preceded by a fortnight's indisposition, which was ascribed to cold and indigestion. Six ounces of blood were immediately taken from the arm; three grains of calomel, mixed with eight of jalap, were given every fourth hour until they operated, and in the evening twelve leeches were applied to the temples. On the mornings of the three successive days, the same quantity of blood was taken from the arm, and every evening the same number of leeches were applied to the temples; a cathartic was daily exhibited, and the tepid bath was employed morning and evening. By these measures a considerable remission of the urgent symptom was produced; and for four days the parents of the little boy supposed the danger to be past; the complaint, however, then recurred with violence, and it became necessary twice again to have recourse to general and local bloodletting, and to repeat the cathartic and the tepid bath. Three grains of calomel, combined with a small quantity of the watery extract of opium, were given every sixth hour until the gums became affected, and ipecacuanha was ordered in order to determine to the surface; the fæces varied in colour and consistence, being dark, hardened, greenish, yellow, and slimy; and while the cathartic was operating, considerable uneasiness was felt in the abdomen, augmented by pressure, and always mitigated by fomentation or the tepid bath. As the child was subject to eruptions of the head, and watery discharge from behind the ears, a drain was established in the vertex by means of lunar caustic, and kept open for nearly seven months. A fit regimen and country air were recommended, and these have prevented a return of the complaint.

History of Hydrocephalus.

"Hydrocephalus may take place without any apparent cause, but it is frequently occasioned by blows, falls, wet, cold, sudden changes of weather; or it may be traced to abscesses in the brain, obstruction in the thoraic or abdominal viscera, a strumous diathesis, &c. Some of these causes operate directly, by stimulating the vessels of the brain; others indirectly, by destroying the equilibrium of the circulation. It attacks both sexes, and all ages, but may, perhaps, with propriety be considered a disease of infancy and childhood. Hydrocephalus presents itself under two forms; the acute and chronic. In the acute, which is the more frequent, it commonly lasts from seven to twenty-eight days; in the chronic, from one to six months."

Dr. Mills details the cases and dissections of twenty patients, who fell victims to acute

hydrocephalus; of these, twelve died before they attained the age of six; seven between the third, sixth, and eighth years; and one aged twelve. The cases and dissections of fourteen patients, who died of chronic hydrocephalus, are also detailed, of whom seven died before the age of four; three between seven and eight; and four between eight and sixteen; from which it would appear, that of thirty-four patients nearly two-thirds died before they had completed their sixth year. The above numbers show a majority of six in favour of the greater prevalence of the acute; and, with respect to the recoveries, seven out of ten laboured under the disease in its acute form. He divides the acute hydrocephalus into two stages, one of excitement, the other of effusion, and considers the disease in the former stage as curable, in the latter mostly incurable.—There were appearances of scrofula in twenty-two of the patients examined; in two the brain appeared scrofulous; in three, the lungs; the liver, in four; the mesenteric glands, in eight; the spleen, in four; and in five, the cervical glands. Of the patients who recovered, six had no visible marks of scrofula, and the parents of twenty-six were, in appearance, free from any affection of this kind.

"Acute hydrocephalus is ushered in with symptoms indicative of a disturbance in the cerebral functions. There is (are) uneasiness, pain in the vertigo, sense of weight, heat, or fullness of the head, attended by languor, chilliness, lassitude on slight exertion, confusion of ideas, and a feeling of uneasiness, as if arising from a long journey; the pain of the head varies; at one time dull, and confined chiefly to the vertex or occiput; at another, acute, and seated in the forehead and temples. In some rare instances, pain is not complained of; the head is often bent forward upon the chest, or reclined upon whatever may give it support; there is throbbing of temporal or carotid arteries; sometimes the pain assumes the intermittent type; a circumstance which may mislead the practitioner, and deserves particular notice. In the second stage, the head is often thrown backwards, and appears stiff and immoveable, indicating a spasm of the muscles of the neck and occiput. The temperature of the body, in the first stage, is raised considerably above the natural standard; that of the head varies, especially the forepart, which, in some cases, is dry, and of a pungent heat; in others, it is alternately hot and cold, or hot and moist; the eye-balls and forehead are frequently rubbed and pressed by the hand, as if to relieve pain; the eye is dull and cloudy, and frequently suffused; a sensation of sand in the eyes is a common symptom; there is strabismus, with intolerance of light; red or black specks are often observed floating in the atmosphere, and there is frequent pulling of the eyelashes. These symptoms are succeeded, in the second stage, by a fixed and vacant stare; the pupils are preternaturally contracted or dilated, sometimes alternately; there is a slow rolling of the eyeballs observed through the eyelids, partially paralysed, when it is not unusual to see only the lower portion of the tunica conjunctiva of one eye and a part of the pupil of the other; one or both eyelids are occasionally swelled, and in some instances there is a puriform, or watery, discharge from both eyes; strabismus is more apparent; there is imperfect vision, objects are seen double, out of place, or of a colour different from what they really are; total blindness generally precedes the fatal termination; picking of the nose is a common symptom, and the fingers are not unusually thrust up the nostrils with violence. The features are generally constricted; in a few instances they have a bloated appearance, the complexion changes from a rosy to a pale, or sallow hue, occasionally a red or purplish circumscribed flush suffuses one or both cheeks; the lips are pale, contracted, and often surrounded by a dark or bluish circle, and the same is observed under the eyelids. The senses of hearing and smelling are too acute; those of taste and feeling vitiated or imperfect; in the second stage these senses are blunted or lost. The voice, at the commencement, is commonly hoarse, and words are delivered slowly, and in a low tone; as the disease advances, it becomes shrill and high, and sentences are expressed rapidly and incoherently; towards the close it is low, muttering, and indistinct. In the first stage the temper is fretful and wayward, easily excited; the patient is subject, on slight occasions, to violent gusts of passion, which are quickly followed by a state of collapse and lowness of spirits. In those whose minds are still capable of some degree of application, the usual studies and amusements are no longer pursued with any pleasure; there is a disposition to retirement; the intellect is clouded, yet occasionally in the delirium, which soon succeeds to this state, the imagination brightens, and a lively or sensible idea is expressed

in language flowing and perspicuous; and though the memory be impaired, yet lessons, formerly learned, will occasionally be repeated with facility; and early ideas, supposed to be long forgotten, will be received and dwelt on with satisfaction. In the second stage the balance of the mind is completely lost, and all is chaos and stupor. In the first stage, the general expression of the countenance is that of pain of body and despondency of mind. In the second, until stupor comes on, the expression of pain is far more intense; this appears from the knitting of the eyebrows, the grinding of the teeth, the agitation of the muscles of the face and body, the moaning and screaming, the sudden closing and opening of the eyelids, and occasionally their unusual distension. An irritative cough is a common symptom in the first stage; the breathing is hurried; there is precordial oppression, palpitation, and frequent sighing. In the stage of effusion the respiration becomes more laborious, and the sighing more deep and frequent. In the first stage, the pulse varies in strength and frequency; at one time full and strong; at another weak; again irregular, communicating to the finger an impression as though the volume of the artery were diminished in diameter. In the second stage, the variations in strength, regularity, and frequency are still more remarkable; it becomes, moreover, intermitting, and in some instances preternaturally slow. In the first stage there is nausea, frequent retching, and sometimes vomiting. In the second stage, the retching and vomiting become more urgent; and in some instances the stomach rejects every liquid as soon as it is swallowed; the appetite is diminished, perhaps lost for several days, then it becomes voracious, and sometimes animal food is anxiously called for. This morbid condition of appetite occurs in the stage of effusion in patients under the age of puberty, and what is remarkable, with regard to infants in the same stage, they snap at the breast with frantic violence. There is generally obstinate constipation, and this is often accompanied with fœtid eructations, communicating to the breath an offensive odour. Diarrhœa is a rare occurrence. The fæces assume a great variety of appearance, being dark, pale, yellow, brown, slimy, curdly, chorous, and greenish, resembling chopped spinage or parsley; at one time they are free from smell; at another the smell is acrid, or peculiarly heavy and offensive, like that of hepatic gas. The urine varies in quantity and quality; when passed during a fit of chilliness, or when there is great cerebral oppression, it is usually copious, light-coloured, or limpid; during a period of excitement, or when perspiration is present, it is commonly high-coloured and scanty, depositing a sediment resembling the lees of wine, or grounds of porter. This appearance of the urine depends very much on the condition and quantity of bile floating in the circulation, and thrown off by the kidneys; sometimes the sediment is thick and slimy, resembling whites of eggs, and devoid of bile. The tongue, in the first stage, is moist and clammy, sometimes dry and parched; in the second, mostly yellowish on the edges, and red and parched in the centre. Fugitive pains are occasionally felt in the stomach, the hypochondria, throughout the abdomen, and they are generally augmented by pressure. There is considerable difference in the colour and temperature of the skin. In the first stage it is sometimes hot, dry, and reddish, often constricted, sallow and cool; on pressure, however, it communicates to the finger a pungent heat. In the stage of effusion it is often hot, but more frequently cool or cold, clammy and relaxed. In some cases I have found it endowed with so high a degree of sensibility, that the slightest pressure upon any part of the body has given pain or uneasiness. This morbid sensibility seems greatest during the stage of excitement; sometimes it appears exquisite, even in the second stage. The muscles of the body and extremities are seldom affected in the first stage. In the second, we find knitting of the eyebrows and forehead, tossing of the arms and legs, spasms of different parts, and general convulsions of the whole frame. With regard to the sphincters, they are, in the second stage, for the most part paralised, and the fæces and urine pass off involuntarily; yet it happens, in some instances, that there is an obstruction to the flow of urine, arising from a paralysis of the muscular fibres of the bladder."

Dr. Mills here enters into an argumentative inquiry into the nature of hydrocephalus, and concludes, that the brain is the organ primarily engaged in this disease, and that the morbid appearances of the thoracic and abdominal viscera are accidental circumstances, and not exciting causes; but we cannot fully agree with the author in his conclusions, being convinced that derangement of the digestive organs, and irritation of the nerves of the jaw during the period of dentition, are frequent exciting causes of hydrocephalus.

The diagnosis of hydrocephalus may be collected from the following. First stage.

"A peculiar expression of countenance, indicative of oppression, pain, and despondency; frequent sighing; a disposition to retirement; a heat, weight, pain, or heaviness of the head, or all these combined; intolerance of light; waywardness and fretfulness; a low, irregular fever; frequent nausea or retching; and the continuance of the disease, notwithstanding the employment of aperients and the remedies usually prescribed in disorders of children."

The second stage is well marked:—

"The heavy sigh, the deep moan, the wild scream, the preternatural dilatation or contraction of the pupils, imperfect or lost vision, delirium, difficult deglutition, paralysis of one hand, arm, or leg, of the eyelids, and of the sphincters; the head and neck permanently bent back; a slow intermitting, or a rapid pulse; frequent vomiting and convulsions."

Treatment of Acute Hydrocephalus.

The remedies most useful in the first stage are bloodletting, cathartics, antimonials, and calomel combined with opium, in the order in which they are related.

"I have mentioned that blood may be abstracted from the temporal artery, the jugular, or from the brachial vein, but it sometimes happens that blood cannot be taken from any of these vessels; and, in that case, our chief dependence is on cupping, or what I generally prefer to it, the application of leeches to the temples, the vertex and occiput, or behind the ears; they should be applied in large numbers, and the flow of blood encouraged, until the morbid actions in the brain are arrested or removed; and we may infer, that some impression has been made upon the complaint, if we find a tendency to deliquium, a weakness or fluttering of the pulse, and a shrinking of the features; symptoms often observed to follow the application of leeches, and which show the power of local bloodletting over the action of the heart and arteries. The same method of depletion should be had recourse to, on every return of excitement."

As soon as a check has been given to the disorder of the head by bloodletting, Dr. Mills recommends brisk cathartics, and the judicious administration of calomel, with the "watery extract of opium," a preparation which he has found to procure rest without causing vertigo, pain, or sense of fullness in the head, symptoms so often observed to follow the exhibition of the Thebaic extract, or the common tincture. Among the auxiliary remedies, the tepid bath holds the first place; the period of immersion, is from fifteen to forty minutes; about an hour before which, the patient should take a dose of calomel and opium, and while in the bath, small repeated draughts of tepid whey, or barley water, in which is dissolved tartrate of ammonia, in doses so minute, as not to excite nausea or vomiting; and during this period, friction must be constantly applied to the body and extremities with the hand, or a soft brush. Blisters should never be applied previously to depletion, or while there is a high degree of excitement; for, under such circumstances, they tend to aggravate the disease. With this precaution, they may be applied to the head or its vicinity, or between the shoulders, or along the spine, and, in some instances, with advantage to the extremities. Dr. Mills has occasionally seen the happiest effects arise from the application of the antimonial ointment to the vertex or occiput, especially in cases which supervene to repelled scabies of the hairy scalp. He has never witnessed any beneficial result in acute hydrocephalus, from establishing a caustic issue in the vertex, as recommended by some practitioners.

Diagnosis and Treatment of Chronic Hydrocephalus.

The diagnosis proceeds thus:—

"Chronic hydrocephalus, in its mode of attack, is more insidious than the acute, and is slower in its progress and development. Vertigo, confusion of ideas, heaviness, or a dull pain in the head, and stupor, attended by a pallid countenance and shrunk features, usually usher in this form of the complaint; whereas, in the first stage of the acute hydrocephalus, we find lancinating pains of the head, throbbing of the temples, suffusion of the eyes, or intense heat of forehead. In chronic hydrocephalus the intellect is more disordered, and the expression of countenance is generally bewildered, fatuitous, or like that of a person half intoxicated. In the acute, on

the contrary, the countenance is often expressive of quickness and intelligence; the voluntary powers are more enfeebled, and the vital functions more oppressed. We may likewise notice a considerable difference in the temperature of different parts of the body; the forehead and extremities being, in the chronic, often cold or damp, while the trunk is little, if at all, above the natural standard; whereas, in the acute, the heat is more intense, and more equally diffused. Further, we find on dissection, the turgescence of the veins, and sinuses of the brain, much greater, and the effusion between the arachnoid membrane and pia mater in larger quantity in the chronic than in the acute. The chronic, moreover, is oftener found accompanied by disorganisation of the substance of the brain, or its membranes."

The curative process is to be governed thus:—

"Bloodletting, general and topical, cathartics, mercurials, opiates, &c., are the principal means to be employed in chronic, as well as in acute hydrocephalus; but as, in the latter, the danger is more imminent, from the high degree of excitement with which it is usually accompanied, the most efficient remedies are to be employed with promptitude and decision. In the chronic, on the contrary, the disease is slower in its progress and development; and as the symptoms are less urgent, measures of a milder nature are commonly required."

Dr. Mills is of opinion, "that permanent benefit is to be expected from the early establishment of a drain in the neck or its neighbourhood, and that mercury should be administered more largely, but opium more sparingly, than in the acute form."

Prophylaxis.

Dr. Mills enters on the mode of treatment calculated to obviate the occurrence of hydrocephalus, and thinks that our great objects are "to maintain the equilibrium of the circulation, and preserve the viscera in a healthy condition; this is to be done by supporting the actions of the cutaneous vessels, and presenting a healthy state of the secretion by the establishment of issues, the use of cold and tepid baths, exercise, warm clothing, proper diet and medicines, and living in a pure air." On each of these points, Dr. Mills enters at considerable length, but our limits will not permit us to follow him; and we find nothing in his remarks, which are, for the most part, judicious, but what may be found in the works of the best authors who have written on this subject.

Internal Inflammation of the Eye.

Dr. Jacob has described a particular kind of iritis, or internal inflammation of the eye, as one of the sequelæ or consequences of typhus fever; the knowledge of which is of importance, not only to ophthalmic surgery, but to pathology generally. The frequent occurrence of the disease may be judged of, from his having met with seventy or eighty examples of it within the last year.

The following history of one well-marked case, affords a summary of the symptoms:—

"The patient states that he recovered from fever two months ago, and returned to work at his trade as usual; that about three weeks ago his sight became dim, his work confused by motes or flies floating before his eyes, and that a few days ago the eye became red and sore. He complains of pain in the eyeball, extending to the temple, and suffers from exposure to sunshine, fire, or candle. He cannot read small print, or tell the hour by a watch. His eye feels hot, and there is a considerable discharge of scalding tears. The sclerotic is highly vascular, and the larger vessels converge to the circumference of the cornea, which is surrounded by a pink zone. The cornea is slightly clouded, the margin forming a whitish circle resembling the *arcus senilis*. The anterior chamber of the eye appears clouded, independent of the cloudiness of the cornea. The iris is altered in colour; the pupil is slightly irregular, acts sluggishly, or is nearly immoveable. The crystalline lens appears clouded, of an amber tint, and opaline appearance; and vision is permanently impaired, or totally lost, with dilated pupil, and other symptoms of perfect amaurosis. When the inflammation subsides, and the disease terminates favourably, the symptoms gradually disappear; the purulent matter, if secreted, is absorbed, and the iris recovers its colour; the pupil becomes regular and active, and vision is perfectly restored. An imperfect recovery is sometimes obtained, leaving defective vision muscæ volitantes, and other amaurotic, symptoms."

The treatment may be learned from the following: bleeding locally or generally, in proportion to the urgency of the symptoms; blistering, where there is much pain or intolerance of light; purgatives, antimonial medicines, opiate fomentations, belladonna as recommended by Beer, in the form of an ointment, rubbed in upon the temple, (half a drachm of the extract, with an equal quantity of mercurial ointment every night,) and calomel in the proportion of two grains, with a quarter of a grain of opium three times a day, till the gums are affected.

SURGERY AT ST. THOMAS'S HOSPITAL?

(From the Morning Chronicle.)

On Monday an inquest was held at St. Thomas's Hospital, on the body of James Springfield, aged 30. The deceased was employed with several other men on board a vessel in Blackwall basin, when the handle of a windlass, at which he was at work, broke, and fractured the deceased's arm and elbow. He was immediately taken to the Hospital, but it appeared that he remained there for *upwards of twelve hours* without receiving any assistance, in consequence of the absence of the medical men; his arm, at last, was attended to by the dresser. The Coroner (Mr. Shelton) said, that the man ought to have received medical assistance when he entered the Hospital, and imputed the inattention to the want of proper experienced persons being appointed to fill the situation of assistant surgeons. A verdict of accidental death was returned.

ON THE ACTIVE PRINCIPLE OF HEMLOCK.

The best method of obtaining this vegetable alkali consists in digesting the plant for several days in alcohol, filtering and evaporating the fluid, mixing the residue with water, and acting either by alumina, magnesia, or the oxide of lead; the whole is then to be evaporated to dryness, and the substance obtained acted upon by a mixture of alcohol and ether; the solution being evaporated, yields the principle now distinguished by the name of conin (*conia*). This principle is said to possess decided alkaline properties; its aqueous solution forms an abundant red precipitate, with the tincture of iodine. Half a grain of this substance will kill a rabbit; the symptoms being the same as those produced by the strychnia.

LONDON MEDICAL SOCIETY.

May 12, 1828.

Dr. Williams, in the Chair.

DISCUSSION ON THE USE OF SPURRED RYE, AND OF DIGITALIS.

A conversation of considerable length took place this evening on the subject of the *secale cornutum*. Mr. Waller stated, as the result of his practice with the remedy in question, that he had employed it in ten cases of lingering labour, and in eight of the cases it proved successful; in the two instances where it failed, it was employed in the form of infusion, prepared with two drachms of the rye to six ounces of water, according to Dr. Merriman's formula. The proportion used in the successful cases was, eight scruples infused for twenty minutes in six ounces of boiling water. Mr. Waller thinks that the ergot will accelerate or increase the contractions of the uterus, if present in the smallest degree; but if the organ have entirely ceased to act, he considers that its results are doubtful. In respect to its alleged ill effects on the child, Mr. Waller said that he had seen no such results. He would not recommend its administration in cases where labour was obstructed from deformity of the pelvis; he had once given it in such a case, and so powerful was the effect on the uterus, that fears were entertained of that organ becoming ruptured by its own inordinate action.

Dr. Stewart proposed some questions in reference to the effect of the ergot on the uterus exclusively, which he seemed disposed to deny, alluding to the deleterious effects resulting from the eating of damaged rye.

It having been remarked by Mr. Waller, that in one instance abortion had been produced under the use of the ergot, some observations were made on the value of the remedy in cases where it might be judged necessary to induce premature labour. The defective state of the English criminal law in respect to abortion was alluded to; that which is with much difficulty attainable under the use of medicine, being punishable with much severity, whilst the readiest and most easily accomplished method, by mechanical means, is not a cognizable offence.*

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* In a trial which took place in the county of Suffolk in 1808, Pizzy, a farrier, and another person, were indicted for administering medicines with an intent to produce abortion. It was proved on the

Dr. Williams informed the Society, that he had within a few days been informed by a northern medical professor, that he was in the constant habit of prescribing drachm doses of the tincture of digitalis, and that in one instance he had known of one fluid ounce having been taken, without producing any unpleasant effect.

On this subject Dr. Clutterbuck remarked, that the effects of digitalis are very uncertain; he himself had often prescribed drachm doses of the tincture; in some instances they had failed in producing any effect, whilst in other cases, very unpleasant symptoms ensued. Dr. Clutterbuck further said, that the tartar emetic was equally uncertain in its effects on the animal economy; in some cases, one-eighth of a grain producing much sickness, whilst in others he had given four or five grains, with no sensible effect.

[It was announced that Mr. Lambert would, at the ensuing meeting, submit some observations to the Society, in reference to the operation of dividing the vas deferens, as a substitute for castration.]

ON THE TREATMENT OF HYDROPHOBIA.

To the Editor of The Lancet.

Sir,—Being assured that any suggestions, however simple, so far as they are well meant towards the alleviation of suffering humanity, will not be deemed altogether unworthy the notice of your professional readers, I am encouraged to lay before them a few remarks on the curative treatment of that most dreadful disease, hydrophobia. Though it is a subject which has occupied the attentive consideration of many of the intelligent members of the profession in all ages, and none more especially than those of the present age, yet we have to lament our total inadequacy to avert its awful fatality; and, hence, I feel some degree of diffidence in entering upon it the subject.

It is true that the prophylactic treatment, when timely and properly practised, has generally been successful; but I am not aware of a single instance of a cure being performed when the disease has evidently arisen from the bite of a truly rabid animal, and the constitutional symptoms have become unequivocally formed. Respecting the nature of hydrophobia, I would define it to be a morbid sensibility of the nervous system, occasioned by the application of the saliva (or the specific virus mixed with it) of a rabid animal directly to the *nerves* of the injured part, producing, by its continuance, more or less inflammation in some of the internal parts of the body.

The dread of water which is said, though erroneously, to be peculiar to hydrophobic patients, appears to depend upon the morbid excitement of the nerves of the pharynx and larynx; giving rise, at each attempt to swallow, to the most violent contractions of those parts, and, sympathetically, of the lower part of the œsophagus and cardiac extremity of the stomach; thereby producing a distressing sense of suffocation and consequent convulsive action of the whole system.

That the dread expressed is of the act of swallowing, and not of the water, is proved by the fact that the sight or noise of any liquid with which the idea of deglutition is associated is sufficient, in many cases, to excite a paroxysm, whereas the rattling of the urine produces not the slightest uneasiness. Again, some patients will carry a cup of water to the lips with tolerable composure, but as soon as the muscles of deglutition are called into action by an attempt to drink, the whole system is threatened with convulsions, and the resolution fails. It is unnecessary for me to take up your time in speaking of the remedies now generally employed in the cure of this disease; but, in addition to them, I propose the antimonium tartarizatum as a medicine which I think, from an *a priori* consideration of its properties, very likely to be useful. I would give it as soon as the constitutional symptoms were anticipated, in such doses as to produce complete nausea, and consequent relaxation of the system; during which state the operations of the mind are in some degree suspended, a circumstance much to be wished for. How long this state should be kept up, I am not prepared exactly to say; but I should suppose there would be little danger of a recurrence of the paroxysms after an interval of from 12 to 24 hours. At the end of this time, if the treatment proved successful so far, I would diminish the dose of the tartar emetic, and combine with it, small doses of calomel and opium, so as to promote its action more especially on the skin and mucous membranes. The submurias hydrargyri might be continued, in this way, to the extent of producing a slight sa-

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trial, that the medicines failed in effecting the intended object, and that it was at length accomplished by mechanical violence. In consequence of the defective state of the law, which has made no provision in respect to manual operations, the criminal was tried for giving medicine which had no effect, whilst the means by which the crime had actually been perpetrated, were only admitted in evidence as proof of the intention with which the medicines were given!

livation, which might be kept up for a few days with advantage. It has been said that if salivation would answer, the disease would cure itself, since a pretty copious flow of saliva is almost a constant symptom; this, however, I am inclined to think, does not depend upon any great increase of saliva; but, rather, upon the patient's inability to swallow it as ordinarily. The depressing plan having been pursued as far as was deemed sufficient, the tone of the system might be restored by the administration of the spts. ammon. arom., with small doses of the tinctura opii; and, subsequently, full doses of the sulphate of quinine. The bowels should, of course, be carefully attended to during the whole course of the disease. Should the constitutional symptoms have so far advanced, before the arrival of the medical attendant, that the patient could not swallow, might not the emetic tartar, dissolved in some bland liquid, as barley water, be injected into the bowels, by means of Reed's syringe; or, in solution in warm water, into the veins, by means of Anel's, with advantage; allowing, in the latter case, as much blood to flow from a vein in one arm, as warm solution was injected into one of the other.

Or, if the patient was of a strong full habit, the abstraction of blood from the arm to syncope, assisted by the use of the warm bath, would probably give us a chance of administering the medicine by the mouth.

With regard to the local treatment, I think the excision, or cauterization of the bitten part might be practised with advantage, even after the constitutional symptoms have commenced; for, since it is a fact that weeks, or even months may elapse, between the receipt of the injury, and the constitution becoming affected, may not the poison remain during that time in the bitten part, and then generate matter equally deadly in its effects, from which the disease is afterwards fed? That the poison enters the system immediately and there remains inactive, even for months, appears to me exceedingly improbable; and, hence, I should have great hopes of rescuing the patient by a careful excision and cauterization of the injured parts, at any period between their receipt and the alteration in the appearance of the cicatrix, which is the first symptom of the constitution becoming affected. May not this treatment be applied to a certain extent in *tetanus*, between which and the disease in question there is a very striking analogy; each appearing to be seated principally in the nervous system.

By giving place to these hints, in an early Number of your *very useful and widely circulated Journal*, You will much oblige, &c.

JOHN MEDD, Surgeon.

Leyburn, Yorkshire, March 27, 1828.

ON THE AGENCY OF PRESSURE IN UTERINE HÆMORRHAGE.

BY R. LANYON, JUN., ESQ., SURGEON, LOSTWITHIEL.

I HAVE been much amused, by meeting with occasional papers in THE LANCET, respecting pressure as an invention in uterine hæmorrhage. Mr. Hill also smiles at "the tug of war" between those modern combatants for immortality; and I, in my turn, may be allowed to dispute the ground, inch by inch, in favour of Ambrose Parey, unless Mr. Hill is prepared to prove that Dr. Dennison lectured at the London Hospital prior to his time! Pressure, whether by books or bandage, is pressure still; it matters but little, in the investigation, how the principle be applied. The question is, who first recommended pressure *in any form*, to arrest or prevent the accession of uterine hæmorrhage? Clearly, neither Mr. Searle nor Dr. W. Dennison, nor indeed do I claim it for Ambrose Parey, but certainly he says of the woman, after delivery has been accomplished, "let her bellie bee also bound or rowled with a ligature of an indifferent breadth and length, which may keep the cold air from the womb, and also press the blood out that is contained in all the substance thereof."* I am not angry that Dr. W. Dennison taught the propriety of using pressure "*in all labours*,"† but am only desirous of recording, that Ambrose Parey inculcated the same thing, more than two hundred years ago. He certainly does not say positively that he applied it with that intention, but I am of opinion that he who would recommend a bandage immediately after delivery, *to press blood from the womb*, could never be ignorant of its utility in arresting uterine hæmorrhage, any more than he who grasps the abdomen for the purpose of inducing separation of the placenta, would neglect the use of the same means in flooding; or, that he who from necessity introduces his hand into the uterus to detach the placenta, should be so far ignorant of the principle, as not to do so in cases of uterine hæmorrhage. For when the accoucheur grasps the abdomen, his indication is to overcome torpidity of the uterus, and it is done with the view of exciting contraction of its fibres. The extension of

* The workes of that famous chirurgeon Ambrose Parey, translated by Johnson, p. 615.

† See LANCET for Nov. 17, 1827, p. 262.

the same principle leads him to adopt a similar plan of treatment in minor degrees of lochial discharge, with success. So, when he discovers flooding is produced by partial detachment of the placenta, and he finds himself compelled to remove the secundines, by introducing his hand into the uterus, he knows that if the hæmorrhage still continue, he may with propriety attempt the corrugation of the uterine mass, *arte non vi*, as Dr. Blundell has it, by a second introduction. Now, in what respect does this, *scientifically*, differ from the principle of Ambrose Parey; who, knowing the liability of fearful hæmorrhagic discharge, advises the precaution, in *every* parturient case, of binding "*the bellie*," for the purpose of pressing the blood out, which is contained in all the substance of the uterus? For it is evident, that if Ambrose Parey conceived that "*rowling*" the abdomen "*with a ligature*," could be effectual in removing all the blood from the uterus, it amounts to an impossibility, that he should not have considered it as powerfully efficacious, in rendering the mouths of the bleeding vessels impervious, in cases of imperious necessity. Confirmatory of the above quotation, and more to the purpose perhaps, is another passage in Ambrose Parey's work. In his 56th chapter, entitled, "Of stopping the immoderate flowing of the flowers or courses," he writes, "the opening a vein in the arm, cupping glasses fastened on the breasts, *bands*, and painful frictions of the upper parts, are greatly recommended in this maladie."

I repeat, that I do not claim the discovery for Ambrose Parey; the discussion of this point, I willingly concede to those more conversant with ancient medical literature than myself; but, certain it is, the bays cannot be allowed to grace the chaplets of those, for whose sakes so many lances have been broken.

Viewing the substance theoretically, for I have not had an opportunity of using it, the ergot promises considerable benefit in uterine hæmorrhage; and it seems to me rather extraordinary, that none of those gentlemen who have contended so strenuously about pressure, should have put its utility to the test. Dr. Hossack advises its use in ten gruin doses three times a day; and, in a paper subsequently published by him, he is said to have administered it successfully.

Lostwithiel, April 7, 1828.

WESTMINSTER HOSPITAL.

CASE OF TIC DOULOUREUX.

Elizabeth Poucher, ætatis 26, was admitted into this Hospital, under the care of Sir A. Carlisle, about ten years ago, with fracture of the clavicle and dislocation of the thigh. According to her statement, it was occasioned by a fall from a window. She remained in the Hospital about six months; she then left the ward, but had always a lameness from the accident. About five years afterwards she was re-admitted, under the care of Mr. White, on account of the hip being very troublesome to her, and she has remained under his care ever since, but without being much relieved. She was removed into the incurable ward about eighteen months ago. About eight weeks since, she complained of a great pain in her right cheek, a little below the temple; she stated that the pain appeared to spread in various directions from a small spot or point in her face; sometimes towards her nose, temples, and fore part of her lower jaw. The pain returned on some days many times in an hour, and continued for several minutes; she was obliged to have recourse to opium, which afforded her some little relief. The complaint began gradually to grow worse; the pain is now (April 22) intolerably acute, and almost unremitting; opiates afford her little or no relief, although taken in considerable quantities; her appetite is very bad; she lives chiefly upon bread and milk, &c.

April 24. Mr. White saw her to day, and proposed trying the influence of mercury, as he had already tried several other plans before, without success. He ordered her to rub in every night and morning, Ung. hyd. fort. ʒi., also the following pill:

℞ *Pulv. opii*, gr. i.;
Hyd. submur. gr. ij.; fiat pilula ter die sumenda.

25. She has neglected to rub in the mercurial ointment; the pain is very acute, and complains that she cannot sleep at night.

26. Mr. White saw her again to day; says she finds no relief from the opium; he ordered her one grain to be added to the former pill, and to take one every four hours, also to continue to rub in the ointment.

28. Finds herself a little relieved; she took a pill every two hours; her mouth is not in the least affected.

29. She finds herself much better; complains that her mouth is becoming sore.

May 1. Says that she cannot eat any thing on account of her mouth being so very sore; ordered to discontinue the pills and the ointment.

3. Ordered a wash for the mouth, composed of alum and water; the pain is very much relieved.

5. The patient complains of as much pain as she was in before she began to take the mercury, and she says that it is shooting in every direction.

7. Continues much in the same state.

8. Continues in very great pain; she was again ordered to rub in ʒi. of the mercurial ointment night and morning, also to take a table spoonful of the following mixture every four hours.

Tincture of opium, ʒij.;
Water, ʒiv.

9. She finds relief from the mixture, which procures her a little sleep, but she still continues in very great pain.

10. Complains that her gums are very sore, but she still perseveres in the use of the ointment.

FATAL TERMINATION OF THE CASE OF STRANGULATED FEMORAL HERNIA.

(*Continued from page* 160.)

April 30. Fæces still pass through the wound; pulse about 90.

May 3. The pulse to day is quite natural; to all appearances the woman is going on well; the incision was ordered to be kept clean with a solution of the chloride of soda ʒiij. to half a pint of water.

5. She was very sick this morning; her abdomen very painful upon pressure; no motion since yesterday; she was ordered a common glyster directly, and to be repeated in the evening; leeches were also ordered to be applied.

7. The abdomen is not so painful upon pressure; the sickness has subsided; she had several motions per anum yesterday and to day; wound continues to discharge.

8. Slept very well for several hours; does not complain of much pain, but she evidently appears to be in a sinking state.

9. She died this morning about one o'clock; her body was opened about fifteen hours after death; upon examination it appeared, that the strangulated intestine was a portion of the *ileum*, which was completely mortified to some extent above and below the place where it had burst.

GUY'S HOSPITAL.

SEVERE CONTUSION OF THE PELVIS, *Followed by a discharge of Urine per Rectum. Subsequent formation of Abscess and Urinary Fistulæ in the Perinæum and Groin.*

TREATED BY MR. KEY.

WILLIAM TOWERS, æt. 48, of middle stature, and muscular, was admitted into Guy's Hospital, Aug. 23, 1827, under the care of Mr. Key, on account of severe injury to the pelvis. He stated, that he was riding upon the beam of a timber carriage, the horses of which became intractable, and, in turning a corner, the forewheels of the carriage came in contact with a post, and he was, in consequence, propelled from his seat, and thrown with considerable force, with his face downwards. Before he could extricate himself, the hind-wheel of the vehicle passed, in an oblique direction, across the pelvis and right thigh. He was immediately picked up, and conveyed to the hospital; where, on examination, it was found that there was much contusion and extravasation of blood under the glutæi muscles of the right thigh, and also in the perinæum and scrotum. It was also thought, that there was a separation of the ileum from the sacrum of the same side. This, however, was not distinctly ascertained. The man was perfectly incapable of standing or sitting at this time. The vital powers were all very feeble. He was sick and faint; his face was pallid and anxious, his pulse small and thready, and the surface of the body was universally cold, and covered with a cold sweat. On the administration of some diffusible stimulus, reaction was induced. After a few hours, we found him complaining of great pain in the pubic region, and the pelvis was again carefully examined, but no fracture could be detected. A catheter was now introduced into the bladder, and a large quantity of urine, mingled with clots of blood, drawn off, which relieved the patient much. Twenty leeches were applied above the pubes; and a lotion, composed of the carbonate of ammonia, spirit of wine, and water, was subsequently ordered to be kept constantly applied to the thigh and pelvis. The patient was put upon low diet, and his bowels were relieved by the occasional administration of purgatives.

The catheter was allowed to remain in his bladder for some days, during which time the urine (though frequently bloody) flowed freely through it. At the end of nine days, however, the instrument produced so much irritation, that the man could no longer bear it. It was therefore withdrawn. He was ordered simply to be kept quiet, and his position was made as easy to him as possible.

Sept. 6. Since the catheter has been

withdrawn, the febrile excitement has much abated. He has passed his urine through his penis, and is, in fact, much better.

18. This man has gone on well since our last report, but to-day he complains of much pain in his bladder and rectum, with constant and painful bearing down sensations. He has a good deal of fever. A poultice was applied over the region of his bladder, and in perineo, but no other means were had recourse to.

26. This morning Mr. Key saw the patient, and he now stated that the urine escaped from him involuntarily through the rectum, clearly showing that there is a communication between the bladder and rectum. A catheter was again introduced, but with no beneficial effect. Scarcely any urine flowed through it; and, in three days, it produced so much irritation and fever, that it was a second time obliged to be withdrawn.

After a short time the febrile excitement subsided, he again became much better; and, at the end of some weeks, was able to walk about the ward. The urine still passed off through the rectum, being a source of much inconvenience and distress.

Nothing worthy of notice was done for this patient for *nearly four months*, and he appeared to suffer only from the disagreeable inconvenience just mentioned. About two months since, however, he was attacked with diffuse inflammation on the right side of the bladder. This inflammation rapidly extended itself down into the perineum, and upon the inner side of the right thigh. It was treated with antiphlogistic means, but without success; suppuration ensued, was attended with a very high degree of constitutional derangement, and the matter burrowed down into the thigh and perineum. The abscess burst near the groin, and upon the inner side of the thigh; and a dependent opening was made in the perineum. One of these openings has subsequently healed, but that in the groin and perineum still remain fistulous; and when the patient strains or coughs, the urine flows through them. Scarcely any urine flows through the penis, except when the bowels are constipated; and then, when it passes by the urethra, the most excruciating pain is produced. Since suppuration took place, the patient has been ordered to take two drachms of Huxham's tincture of bark, and two ounces of the decoction twice a day. He was also allowed a generous diet.

Under the extensive suppuration, and consequent protracted irritation, the patient's sufferings have been very great. He is now very much emaciated, and his powers of constitution are evidently upon the decline.

ST. THOMAS'S HOSPITAL.

AMPUTATION OF THE LEG, IN A CASE OF NECROSIS.

On Friday, May 9th, Mr. Travers amputated below the knee for extensive necrosis of the tibia, the disease having existed 18 months.

The patient is a boy of about 16 years of age. He stated that about two years ago he received a blow upon the leg, and that he had felt pain for some time previously to its ulcerating, and was incapable of walking upon it. The whole of the tibia was much enlarged, and extensively diseased. Upon the anterior surface of the leg there were several large, unhealthy, fœtid ulcers, of a circular form. In most of them the bone was denuded, and apparently dead.

The operation was performed in the following manner:

A long catlin was pushed through the back part of the leg, about two inches below the femoro-tibial articulation, and carried downwards. A flap, of about three or four inches in length, was thus cut out of the gastrocnemii muscles. An incision, with an amputating knife, was then commenced upon one side of the flap, carried round the anterior part of the leg to the other side of it. A smaller catlin was pushed between the bones, and these were sawn off just below the tubercle of the tibia. The head of the fibula was afterwards removed with a scalpel. The operation was finished in the usual manner, and, on the whole, was very well performed.

TO CORRESPONDENTS.

Communications have been received from Satirist—A Phrenologist—Mr. Sheldrake—Mr. Girtin—Mr. Wansbrough—Dr. Alexander—Medicus—A Subscriber—Dr. Greening—Westmonachus—A Well Wisher to Assistants—Mr. Maclure—A Bachelor—An Enemy to all Humbug—Mr. J. H. Beaumont—Dr. Hare—Dr. Mackintosh—L.—Mr. F. Dunne—Mr. Bedingfield—A General Practitioner, and a Perpetual Pupil to Guy's Hospital—R. J.—An Unavoidable—Non Medicus.

"A Bartholomew Pupil," complains of one of the class whom he designates a "Swindler." As the letter relates to a private transaction, of course we cannot publish it.

A Student is not entitled to an examination before the Royal College of Surgeons, of Dublin, unless he have served an Apprenticeship to a Member of that College.

"An Enemy to a Corrupt System" will oblige us by writing, as he has promised. This notice was accidentally omitted last week.